

RECLAMATION

Managing Water in the West

Final Environmental Assessment

10-Year Use Agreement for the San Luis & Delta-Mendota Water Authority's Long-term Storm Water Management Plan for the Grasslands Drainage Area

EA-19-029



— BUREAU OF —
RECLAMATION

Interior Region 10 California-Great Basin
California*, Nevada*, Oregon*

*Partial

South-Central California Area Office

December 2019

Mission Statements

The mission of the Department of the Interior is to conserve and manage the Nation's natural resources and cultural heritage for the benefit and enjoyment of the American people, provide scientific and other information about natural resources and natural hazards to address societal challenges and create opportunities for the American people, and honor the Nation's trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated island communities to help them prosper.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

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Section 1 Introduction

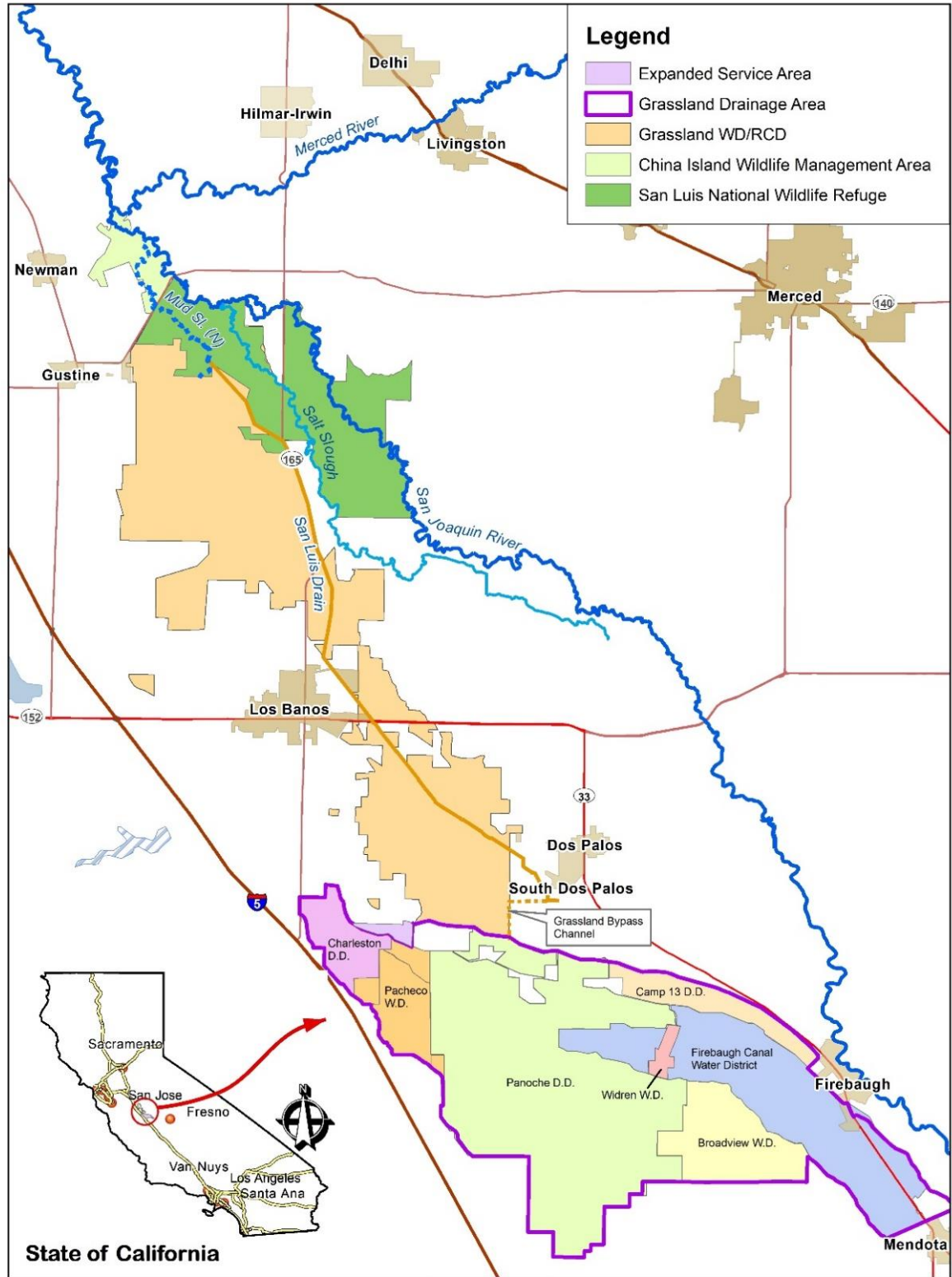
The Bureau of Reclamation (Reclamation) provided the public with an opportunity to comment on the Draft Environmental Assessment (EA) between December 9, 2019 and December 23, 2019. Seven comments were received. The comment letters are included in Appendix A. Changes between this Final EA and the Draft EA, which are not minor editorial changes, are indicated by vertical lines in the left margin of this document.

1.1 Background

The Grassland Bypass Project (GBP) was designed to improve water quality in more than 93 miles of wetlands water supply channels and the lower San Joaquin River by preventing discharge of subsurface agricultural drainage water into wildlife refuges and wetlands in central California. Since October 1996, the GBP has consolidated regional subsurface drainage water, including subsurface agricultural drainage water, from the Grassland Drainage Area (GDA), an area that encompasses approximately 97,400 acres of farmland in central California between the town of Los Banos, the San Joaquin River and the Interstate 5 (Figure 1). The GDA includes areas within the following districts: Broadview Water District, Camp 13 Drainage District, Charleston Drainage District, Firebaugh Canal Water District, Pacheco Water District, Panoche Drainage District, and farm lands not incorporated into any district. Broadview Water District is no longer irrigated and does not drain into the system.

Currently, the consolidated drainage water is conveyed through a segment of the San Luis Drain (Drain) to Mud Slough, a tributary of the San Joaquin River. Prior to the GBP, drainage water, including storm-induced drainage water, from lands in the GDA was discharged into Salt Slough and other channels used to deliver water to wetland areas before reaching Mud Slough. This drainage water contains high concentrations of selenium, salts, and other constituents that are harmful to wildlife.

The California Regional Water Quality Control Board, Central Valley Region (Regional Board), issued a Waste Discharge Requirement (WDR) that specified the maximum monthly and annual loads of selenium that the GBP may discharge into Mud Slough and the San Joaquin River (Regional Board 2018). The WDR includes monthly monitoring for molybdenum and nutrients (nitrate, ammonia, total nitrogen, total phosphate, and ortho-phosphate); weekly analyses of salinity, selenium, boron, and other parameters, and chronic toxicity testing. The WDR also outlines a program to monitor storm water releases from the GDA into the Grassland wetland supply channels should they occur.



Grassland Bypass Project Monitoring Site Location Map

Prepared by:
Summers Engineering, Inc.
Consulting Engineers
Hanford California

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Figure 1 Proposed Action Area

Overall discharges, including subsurface agricultural drainage water and storm-induced drainage water, from the GDA into the Drain under the GBP have been reduced approximately 90 percent (from 37,800 acre-feet to 3,800 acre-feet). Selenium, salt, and boron loads have all been reduced by similar ratios. Discharges from the GDA after 2014 have been comprised entirely of storm-induced drainage water (San Luis & Delta-Mendota Water Authority 2019a). Prior to the GBP, the monthly mean concentration of selenium in Salt Slough was 16 parts per billion (ppb). Since October 1996, the concentration has been less than the water quality objective of 2 ppb (Reclamation 2009). Selenium concentrations in Mud Slough (Site D) have been reduced from monthly averages above 20 ppb in the late 1990s to less than 3 ppb by 2018 (Figure 2). Monthly average selenium concentration in the San Joaquin River at Crows Landing (Site N) have not exceeded 2 ppb since 2009, and they are now frequently below detection limits (San Luis & Delta-Mendota Water Authority 2019a).

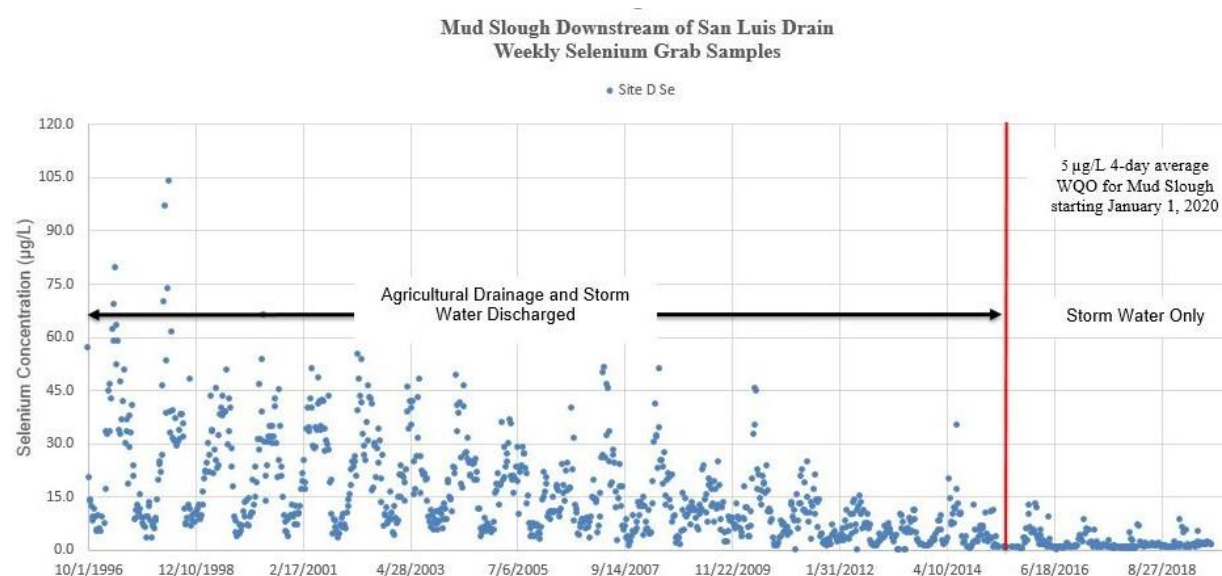


Figure 2 Selenium Concentrations at Site D

The GBP has been successful in meeting current water quality objectives for selenium in the San Joaquin River (San Luis & Delta-Mendota Water Authority 2015, San Francisco Estuary Institute 2016). Participating districts and their farmers have effectively reduced the volume of drainage water that reaches Mud Slough North and ultimately the San Joaquin River through on-farm water conservation, more efficient irrigation practices, District recirculation of drainwater into their irrigation systems, infrastructure improvements, and reusing drainage waters by irrigating a variety of salt tolerant crops (San Francisco Estuary Institute 2016). This reuse of drainage waters for irrigation principally occurs within the San Joaquin River Water Quality Improvement Project (SJRIIP) and has been a crucial tool to reduce discharges of drainage water (including selenium and salts), as specified in the 2009 Agreement for Use and Waste Discharge Requirements issued by the California Regional Water Quality Control Board, Central Valley Region (Regional Board). The Waste Discharge Requirements specify the conditions for discharging drainage water into the San Joaquin River and specified channels within the Grassland watershed by certain dates (Central Valley Regional Water Quality Control Board 2018).

The operation of the GBP is permitted under the Water Quality Control Plan (Basin Plan) for the Regional Board Order No. R5-2015-0094 which requires all agricultural drainage discharges to end by December 31, 2019. In order to meet the zero discharge requirements from the Control Board, the Grassland Area Farmers (GAF) developed measures to manage subsurface agricultural drainage water in-district including (1) source control and recirculation, (2) shallow groundwater pumping, and (3) drainage water reuse within the SJRIP. These measures have been successful in reducing the selenium load to the San Joaquin River under the GBP as noted above and shown in Figure 2.

However, the GDA has a history of storm water flows that have affected water quality within the area, and therefore, despite the management of subsurface agricultural drainage water, the need to manage storm water flows remains. Most of the GDA soils are derived from marine sediments in the Coast Range that contain salts and trace elements such as boron, molybdenum, and selenium (Reclamation 2009). As shown in Figure 3, storm water flows pond within the lower portions of the GDA. Prior to the GBP, storm water flows within the GDA and from upslope streams was discharged into wetland water supply channels.

Since 1991, storm water flows have been managed under the GBP, within certain limits, and discharged through the Drain; however, this will cease once the GBP ends at the end of 2019 without a new use agreement.



Figure 3 Photograph Showing Flooding in the GDA February 1998

Normally, with the combination of farmer and district management strategies, the SJRIP manages all irrigation-induced drainage flows within the GDA to avoid discharges through the Drain; however, storm events occur during the winter when irrigation demand is minimal, and the ground is saturated by rain, which limits the amount of flows that can be managed in the SJRIP. Consequently, the GAF, in coordination with the San Luis & Delta-Mendota Water Authority (Authority), have proposed a long-term storm water management plan (San Luis & Delta-Mendota Water Authority 2019a, 2019b) to address these flows and have requested authorization from the Bureau of Reclamation (Reclamation) to use the Drain after December 2019 as a way to manage storm water flows that cannot be fully contained within the SJRIP.

1.2 Need for the Proposed Action

The measures implemented by the GAF to manage subsurface agricultural drainage water under the GBP has helped to manage storm-induced flows; however, they are insufficient to completely eliminate storm-related discharges. Once sufficient rainfall has occurred (i.e., soil saturation is reached), storm water and shallow groundwater seeping from adjacent irrigated lands accumulates in the regional drains and flows north, ponding against canal banks. Stormwater may also be discharged under extreme conditions, such as those experienced in 1998, to wetlands in the area when the capacity of the Grassland Bypass Channel is reached and accumulated storm water flows threaten the integrity of the irrigation canals, jeopardizing water deliveries to agricultural areas outside of the GDA and to private, state and federal wetland areas. Unmanaged storm water flows could also lead to property damage and operational restrictions.

The Authority needs to address the possibility of flooding from overland and storm-induced drainage water. The purpose of the Proposed Action is to provide a mechanism to manage storm water flows that cannot be contained within the SJRIP and to therefore prevent impacts to wetlands, infrastructure, and agricultural areas within and outside the GDA.

1.3 Scope

This EA has been prepared to examine the potential impacts on environmental resources as a result of Reclamation authorizing the use of the Drain by the Authority as of January 1, 2020, to manage storm water flows upon expiration of the Third Use Agreement.

Long-term Stormwater Management Plan

The Proposed Action does not include the non-federal actions associated with the long-term stormwater management plan developed by the GAF and the Authority (San Luis & Delta-Mendota Water Authority 2019b) as there is no federal nexus for Reclamation outside use of the Drain. Such non-federal actions include the use of existing and new short-term storage basins to reduce storm-induced discharges to Mud Slough (North), enhancements to existing non-federal facilities, installation of new infrastructure such as new pump/conveyance systems and a remote shut-off system for the tile sumps within the GDA, among other features as shown in Figure 4.

The Authority prepared an Initial Study (San Luis & Delta-Mendota Water Authority 2019a) and an Addendum to the GBP Final EIS/EIR pursuant to the California Environmental Quality Act

(CEQA) to address the potential environmental impacts of its long-term storm water management plan, including the use of the Drain to discharge up to 150 cubic feet per second (cfs) of storm-induced flows to Mud Slough (San Luis & Delta-Mendota Water Authority 2019b). The Authority adopted the Addendum on October 10, 2019 and subsequently filed a Notice of Determination with the State Clearinghouse. The management of agricultural subsurface drainage by the GDA, which will continue within the GDA in order to avoid the need for discharging such water outside GDA boundaries, was analyzed in the 2009 EIS/EIR.

As part of the long-term stormwater management plan, the Panoche Drainage District has received a State of California Proposition 84 grant to upgrade storm water management infrastructure. These upgrades include the expansion of the SJRIP reuse area, additional drainage tiles, new tile sumps, new tile sump pump stations, new pipelines, ditch extension/canal linings, short-term storage basins, and installation of a Supervisory Control and Data Acquisition (SCADA) system with associated communication system (meters, communication towers, and new power line) for remote operation of the tile sump pumps within the GDA. These upgrades have been and will continue to be implemented by Panoche Drainage District with or without Reclamation's approval of the Proposed Action.

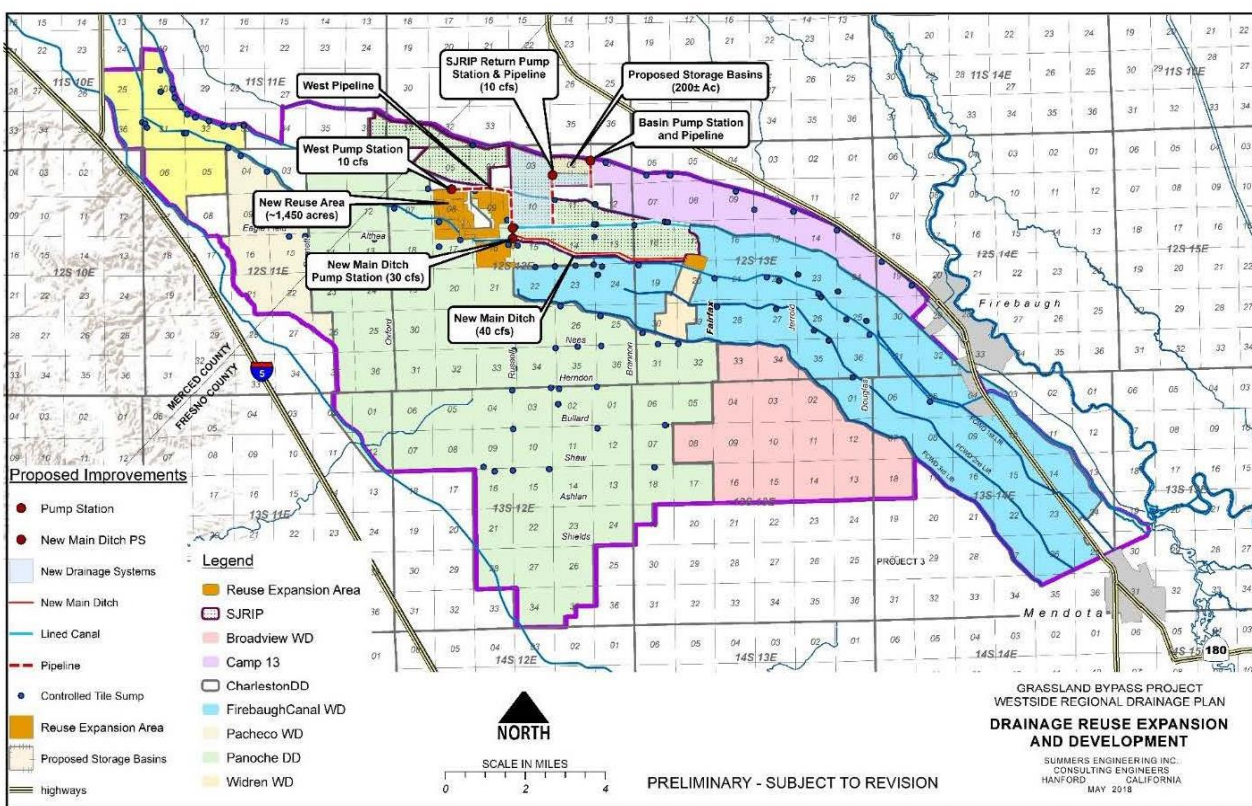


Figure 4 Authority's Long-term Stormwater Management Plan Features

San Luis Drainage Feature Re-Evaluation

This EA does not analyze the effects of Reclamation's providing agricultural drainage service to the San Luis Unit. The provision of drainage service is a separate federal action that has been considered in a separate environmental document, the *San Luis Drainage Feature Re-Evaluation*

Final Environmental Impact Statement [SLDFR FEIS] (Reclamation 2005). The SLDFR FEIS evaluated seven Action alternatives in addition to the No Action alternative for implementing drainage service within the San Luis Unit, including the construction and operation of the SJRIP and the management of subsurface agricultural drainage water within the Northerly Area. The ROD for the SLDFR-FEIS was signed March 9, 2007 (2007 ROD). The actions considered in this EA would not alter or affect the analysis or conclusions in the SLDFR FEIS or 2007 ROD. Management of subsurface agricultural drainage water under the SLDFR-FEIS will continue with or without the Proposed Action.

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Section 2 Alternatives Including the Proposed Action

This EA considers two possible actions: the No Action Alternative and the Proposed Action. The No Action Alternative reflects future conditions without the Proposed Action and serves as a basis of comparison for determining potential effects to the human environment.

2.1 No Action Alternative

Under the No Action Alternative, Reclamation would not allow the Authority to introduce and convey storm water flows through the Drain as of January 1, 2020.

Under the No Action Alternative, storm water flows would continue to be managed under the GBP and current Use Agreement until it expires at the end of December 2019. The GAF would continue to implement current storm water management actions that do not include use of the Drain after December 2019 as described in the Authority's long-term storm water management plan (San Luis & Delta-Mendota Water Authority 2019a, 2019b). However, as noted previously, the SJRIP may not be able to manage storm water flows, even with the proposed expansion, and ponding of storm water (containing elevated levels of selenium) would occur. These flooded areas, having no discharge outlet, would remain as unmanaged ponds and would evaporate away or seep into the shallow water table. The ponded areas would create attractive wildlife habitat, exposing shorebirds and other animals to elevated levels of selenium. In extremely wet conditions, severe ponding could oversaturate the levees of the Central California Irrigation District Outside and Main Canals, jeopardizing the integrity of major water conveyance systems for the San Joaquin Valley. In these conditions, it is possible that storm water flows would be discharged to wetland supply channels to protect the canals, which would have further impacts to wetland water supply quality and habitat. GDA unmanaged storm water flows could also lead to property damage and operational restrictions.

2.2 Proposed Action

Under the Proposed Action, Reclamation would agree to allow the Authority to continue to introduce and convey up to 150 cfs of storm-induced flows through the Drain, consistent with permitting from the Regional Board, over a 10-year period. There will be no modification to federal facilities under the Proposed Action.

2.2.1 Conservation Measures and Monitoring Program

The Authority, in cooperation with the GAF, would implement all the measures included in its long-term storm water management plan to minimize storm flows (San Luis & Delta-Mendota Water Authority 2019b), as well as implement all conservation measures included in this section and the concurrence memorandums issued by the U.S. Fish and Wildlife Service (Appendix B)

and National Marine Fisheries Service (Appendix C)¹. In addition, any use of the Drain is required to follow all terms and conditions of the WDR issued by the Regional Board.

Specifically, the following conservation measures will be implemented by the Authority and the GAF to minimize or avoid adverse impacts to water quality:

- A 5 µg/L, 4-day average and 20 µg/L selenium, maximum water quality objective shall be implemented for discharges to Mud Slough (North) and the San Joaquin River from the Mud Slough confluence to the Merced River.
- A 5 µg/L selenium, 4-day average, and 12 µg/L selenium, maximum water quality objective shall be implemented for the San Joaquin River from the confluence with the Merced River to Vernalis.
- A 2 µg/L selenium, monthly mean, and 20 µg/L selenium, maximum shall be implemented for Salt Slough and for the water supply channels in the Grassland Watershed.
- Drainage sumps shall be turned off prior to and during storm events to reduce introduction of drainage into the stormwater conveyed within the GBP channels.
- The Drain will continue to be operated and maintained by the Authority to prevent drainage water from flowing into portions of the Drain south of Check 19.
- Existing and new regulating basins will collect stormwater prior to and during storm events to reduce peak flows and the associated introduction to the Drain for discharge. Water in the regulating basins would distribute the storm water to the SJRIP reuse area beginning in late February or to the Grassland Bypass Channel and Drain if there is insufficient reuse capacity. The basins would be emptied by late May to avoid exposure to wildlife.
- Sediment removal in the Drain shall be implemented pursuant to the then-current Sediment Removal Plan, similar to what was done under the GBP and as required under the Third Use Agreement.

At the request of NMFS, the following additional monitoring and reporting has been included in the Proposed Action:

- The Authority and their representative(s) would implement an adaptive Monitoring Program, which would be a collaborative effort between existing monitoring programs (such as the Irrigated Lands Regulatory Program), the GBP Monitoring Program, and new monitoring tasks to provide additional data. The intent is to leverage existing monitoring efforts and supplement them as necessary to obtain information relevant to potential effects of the Proposed Action. Data collected over the first two years of the monitoring effort would be evaluated against thresholds of concern to the extent those thresholds are available. Data collection for, and the reporting of, constituents that are consistently below those thresholds or are otherwise determined to be below levels of concern may be adaptively withdrawn from the Monitoring Program.

¹ Reclamation did not request consultation with NMFS pursuant to the Fish and Wildlife Coordination Act (FWCA) as FWCA does not apply to this action. As such, the proposed recommendations provided by NMFS for FWCA in their concurrence memorandum are not included as a requirement for the Proposed Action.

Figure 5 depicts the names and locations of seven monitoring sites where data would be collected specifically for the Monitoring Program associated with the Long-term Stormwater Management Plan (San Luis & Delta-Mendota Water Authority 2019b). Data collected at additional sites that are part of ongoing WDR and the Irrigated Lands Regulatory Program through the Regional Board and Reclamation monitoring program for the GBP will be incorporated into the Monitoring Program. A description of those sites follows:

GBP Monitoring Sites

- Inlet to the Drain - Site A: This site measures the discharge from the GDA into the Drain and is continuously monitored for flow and specific conductivity.
- Outlet from the Drain into Mud Slough (North) – Site B: This site is located within the Drain, approximately 26 miles downstream from Site A and measure the discharge from the Drain into Mud Slough (North). There are two sites that represent Site B: Site B2, located at the terminus of the Drain, where continuous flow and specific conductivity are measured, and Site B3, located approximately two miles upstream of Site B2. Site B3 includes an auto-sampler that collects daily samples for analysis.
- Mud Slough (North) Downstream of the Drain – Site D: This site is located within Mud Slough (North) approximately 500 yards downstream of Site B2. A U.S. Geological Survey (USGS) monitoring site at this location measures continuous flow and specific conductivity and is available through the California Data Exchange Center (CDEC) as site MSG. An auto-sampler at this site collects daily samples that are monitored for total selenium.
- San Joaquin River Downstream of Mud Slough (North) – Site R: This site is located on the San Joaquin River approximately 1.5 miles downstream of the Mud Slough confluence and will characterize the impacts of Mud Slough discharges on the San Joaquin River.

Irrigated Lands Regulatory Program – Westside San Joaquin River Watershed Coalition Monitoring Sites

- San Joaquin River at Lander Avenue. This site is located on the San Joaquin River approximately 10 miles upstream of the Mud Slough confluence. This site is visited monthly for water samples in compliance with the Irrigated Lands Regulatory Program covering a variety of pesticide, general chemistry, nutrients, and metal constituents and will be used to characterize the receiving waterbody conditions prior to the Mud Slough discharge. A USGS monitoring station at this site measures continuous flow, which is available on CDEC.
- Mud Slough Upstream of the Drain. This site is located approximately 500 yards upstream of the Drain terminus. This site is visited monthly for water samples in compliance with the Irrigated Lands Regulatory Program covering a variety of pesticide, general chemistry, nutrients, and metal constituents and will be used to characterize the receiving waterbody conditions prior to the San Luis Drain discharge.

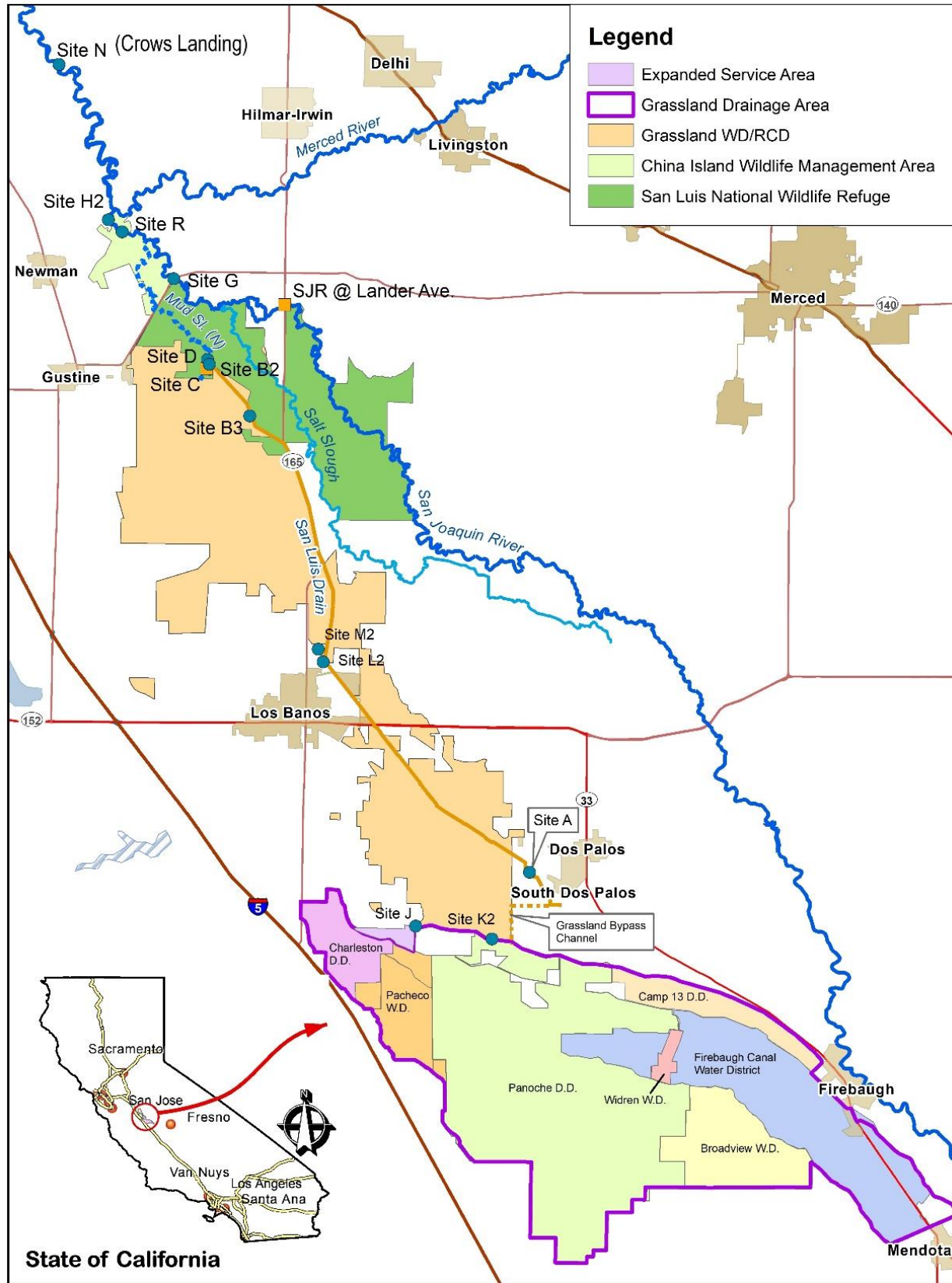


Figure 5 Long-term Stormwater Management Plan Project Monitoring Site Location Map

New monitoring site

- San Joaquin River at Freemont Ford – Site G. This site is located approximately 4 miles upstream of the confluence with Mud Slough. This site will be added to the monitoring program to characterize receiving waterbody selenium characteristics.

The monitoring schedule would be generally dependent on the type of constituent; however, some measurements (like flow) are monitored continuously, some sites have continuously acting auto-samplers for daily or weekly composite samples, and some sites are visited weekly for sample collection. The location and frequency of constituent monitoring is summarized in Appendix E. The monitoring program components may evolve over time, consistent with the requirements of the WDR and ESA consultations completed for the Proposed Action. A brief description of the constituents is provided here:

- Total Selenium. Water samples would be collected and tested for total selenium. Total selenium results would include the combined concentration of selenium in both the dissolved and particulate phases as an unfiltered sample.
- Dissolved Selenium. Water samples would be collected, laboratory filtered, and analyzed for the concentration of selenium in the dissolved phase.
- Selenium in sediment. Sediment samples would be collected from the streambed and analyzed for selenium concentration.
- Particulate Selenium. Particulate samples would be collected using the method described in the document entitled “Draft Translation of Selenium Tissue Criterion Elements to Site Specific Water Column Criterion Elements for California Version 1, August 8, 2018”.
- Metals & Hardness. Metals analysis would include the dissolved (laboratory filtered) analysis of iron, lead, mercury, copper, and zinc. Hardness (as calcium carbonate) would be included in all dissolved metals analysis for the interpretation of potential aquatic risk.
- Pesticides. Pesticides are monitored through the Irrigated Lands Regulatory Program. Specific pesticide constituents are selected through a Pesticide Evaluation Protocol developed by the Regional Water Quality Control Board which utilizes past pesticide use data and recent detections to determine which pesticides would be analyzed in any given month and at any given location.
- Total Suspended Solids and Turbidity. Turbidity would be analyzed using a field turbidimeter. Total suspended solids samples would be collected in the field and analyzed in a laboratory.
- Oil/Grease/Hydrocarbons. Oil, grease, lubricants, and other petroleum hydrocarbons/polycyclic aromatic hydrocarbons would be sampled for at the first storm flush of the season to determine if mechanical fluids are contaminating discharges.
- Nutrients. Nutrient samples may include ammonia (as N), nitrate (as N), total phosphorous, or soluble ortho-phosphorus.
- Bacteria. Bacteria samples would be collected and measured for *E. coli*.

An annual report would be provided to NMFS on October 1 of each year of the monitoring program. The report would describe the methods used to monitor each constituent and tables of the results.

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Section 3 Affected Environment and Environmental Consequences

This section identifies the potentially affected environment and the environmental consequences involved with the Proposed Action and the No Action Alternative, in addition to environmental trends and conditions that currently exist.

3.1 Resources Eliminated from Further Analysis

Reclamation analyzed the affected environment and determined that the Proposed Action did not have the potential to cause direct, indirect, or cumulative adverse effects to the resources listed in Table 2.

Table 1 Resources Eliminated from Further Analysis

Resource	Reason Eliminated
Cultural Resources	There would be no impacts to cultural resources as a result of implementing the Proposed Action. No new construction or ground disturbing activities would occur as part of the Proposed Action. Reclamation has determined that these activities have no potential to cause effects to historic properties pursuant to 36 CFR Part 800.3(a)(1). See Appendix A for Reclamation's determination. Cultural resources impacts related to the Authority's proposed improvements are being addressed pursuant to CEQA.
Air Quality	There would be no impacts to air quality as the Proposed Action would simply allow the continued use of the existing Drain. Air quality impacts related to the Authority's proposed improvements are being addressed pursuant to CEQA.
Environmental Justice	The Proposed Action would not cause dislocation, changes in employment, or increase flood, drought, or disease nor would it disproportionately impact economically disadvantaged or minority populations.
Global Climate Change	The Proposed Action does not include construction of new facilities or modification to existing facilities. As such, there would be no additional impacts to global climate change. Climate change impacts related to the Authority's proposed improvements are being addressed pursuant to CEQA.
Indian Sacred Sites	The Proposed Action would not limit access to, or ceremonial use of, Indian sacred sites on Federal lands by Indian religious practitioners or affect the physical integrity of such sacred sites. There would be no impacts to Indian sacred sites as a result of the Proposed Action.
Indian Trust Assets	The Proposed Action would not impact Indian Trust Assets as there are none in the Proposed Action area.

3.2 Biological Resources

3.2.1 Affected Environment

The Action Area is the Grasslands Watershed in Fresno and Merced Counties which ultimately discharges into the Lower San Joaquin River (Figure 1). Crows Landing was determined to be the northernmost extent of the Action Area in the San Joaquin River as Reclamation's water sampling at this site (daily and weekly sampling from 2015 to present) show that all monthly averages since 2015, measured at Site N, have been well below 2.0 µg/L selenium, a benchmark threshold of concern for wildlife (Table 2). As shown in Figure 6, there have been no exceedances of the Regional Board's water quality objective (5 µg/L monthly average) since

1997, and the selenium concentrations have been below 2 µg/L since 2010 prior to and after cessation of subsurface drainage discharges from the Drain.

Table 2 Monthly Selenium Averages (µg/L) at Site N (Crows Landing) 2015-2019

Month	2015	2016	2017	2018	2019
January	0.673	0.724	0.498	0.541	0.370
February	0.895	1.089	<0.4	0.250	0.320
March	1.291	0.596	<0.4	0.903	0.340
April	0.532	0.761	<0.4	<0.4	0.240
May	0.402	0.931	<0.4	<0.4	<0.4
June	0.448	0.455	<0.4	0.308	<0.4
July	0.512	0.462	<0.4	0.382	<0.4
August	0.413	0.460	<0.4	0.331	<0.4
September	0.404	0.455	<0.4	<0.4	<0.4
October	<0.4	0.413	<0.4	<0.4	
November	<0.4	0.415	<0.4	<0.4	
December	0.753	0.628	<0.4	0.524	

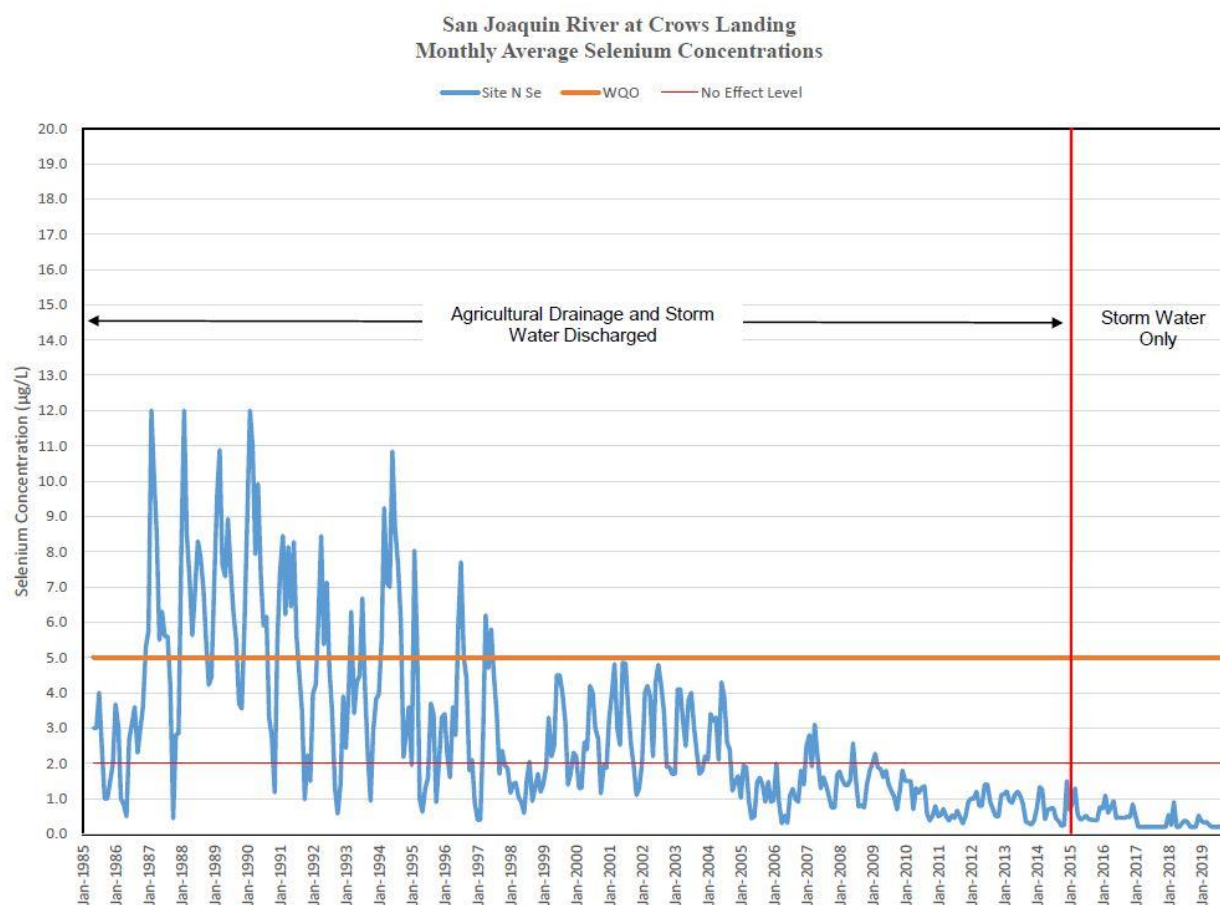


Figure 6 Selenium Concentrations (µg/L) at Site N (Crows Landing) 1985-2019

Lemly (1996) developed a hazard rating for the accumulation of planktonic food-chain and dietary toxicity to fish based on water selenium levels. That rating listed water between 1 and 2 µg/L as posing a minimal hazard and water less than 1 µg/L as posing no hazard. All of the monthly selenium averages measured at Crows Landing (Site N) since 2015 are less than half of

the Environmental Protection Agency's (2016) recommended freshwater selenium ambient chronic water quality criterion for protection of aquatic life of 3.1 µg/L in lotic (moving water) aquatic systems for monthly exposure (Figure 6). Only two monthly averages, March 2015 and February 2016, exceeded 50% (1 µg/L) of the benchmark threshold. Examining more recent data, monthly averages in 29 of the 33-month samples since January 2017 have been below 0.4 µg/L, which is considered the upper limit of background levels of selenium for freshwater (USDOI 1998).

Reclamation prepared Table 3 using lists obtained on August 8, 2019 by accessing the U.S. Fish and Wildlife Service (USFWS) Database at <http://ecos.fws.gov/ipac/> and from the National Marine Fisheries Service (NMFS) at https://www.westcoast.fisheries.noaa.gov/maps_data/california_species_list_tools.html. These lists were obtained for the Action Area. In addition to the federally listed species shown in Table 3, Western Burrowing Owl and Swainson's Hawk, both protected by the federal Migratory Bird Treaty Act, may be present, as well as the fall-run Chinook salmon, for which Essential Fish Habitat occurs in the Action Area. The California Natural Diversity Database (CNDDB 2019) was also queried for the Action Area. The only species that has designated critical habitat within the Action Area is the Central California steelhead.

Table 3 Federally Listed Threatened and Endangered Species

Species	Status ¹	Effects
Amphibians		
California red-legged frog (<i>Rana draytonii</i>)	T, X	No effect determination; species no longer occurs in this part of its range.
California tiger salamander (<i>Ambystoma californiense</i>)	T, X	No effect determination; regularly maintained regulating basins and surrounding upland habitat would not be suitable for this species.
Birds		
California Condor (<i>Gymnogyps californianus</i>)	E, X	No effect determination; not expected to occur in the Action Area, which isn't near cliffs used for nesting.
Western Yellow-Billed Cuckoo (<i>Coccyzus americanus occidentalis</i>)	T, PX	No effect determination; species could fly over during migration but extensive willow-cottonwood riparian is absent.
Fish		
California Coastal chinook salmon (<i>Oncorhynchus tshawytscha</i>)	T, X (NMFS)	No effect determination; Action Area is outside species' range.
Central California Coastal steelhead (<i>Oncorhynchus mykiss</i>)	T, X (NMFS)	No effect determination; Action Area is outside species' range.
Central Valley spring-run chinook salmon (<i>Oncorhynchus tshawytscha</i>)	T, X (NMFS)	May affect, not likely to adversely affect. Minor water quality impacts would occur in the San Joaquin River, from Mud Slough (North), upstream to Crows Landing.
Central Valley steelhead (<i>Oncorhynchus mykiss</i>)	T, X (NMFS)	May affect, not likely to adversely affect. Minor water quality impacts would occur in the San Joaquin River, from Mud Slough, upstream to Crows Landing.
coho salmon - central CA coast (<i>Oncorhynchus kisutch</i>)	E, X (NMFS)	No effect determination; Action Area is outside species' range.
delta smelt (<i>Hypomesus transpacificus</i>)	T, X	No effect determination; Action Area does not include the Sacramento-San Joaquin Delta.
eulachon, southern DPS ³ (<i>Thaleichthys pacificus</i>)	T, X (NMFS)	No effect determination; Action Area is outside species' range.

Species	Status ¹	Effects
North American green sturgeon (<i>Acipenser medirostris</i>)	T, X (NMFS)	May affect, not likely to adversely affect. Minor water quality impacts would occur in the San Joaquin River, from Mud Slough, downstream to Crows Landing.
Northern California steelhead (<i>Oncorhynchus mykiss</i>)	T, X (NMFS)	No effect determination; Action Area is outside species' range.
Sacramento River winter-run chinook salmon (<i>Oncorhynchus tshawytscha</i>)	E, X (NMFS)	No effect determination; Action Area does not include the Sacramento-San Joaquin Delta.
South Central California steelhead (<i>Oncorhynchus mykiss</i>)	T, X (NMFS)	No effect determination; Action Area is outside species' range.
Southern California steelhead (<i>Oncorhynchus mykiss</i>)	E, X (NMFS)	No effect determination; Action Area is outside species' range.
Southern Oregon/Northern California Coast coho salmon (<i>Oncorhynchus kisutch</i>)	T, X (NMFS)	No effect determination; Action Area is outside species' range.
Invertebrates		
black abalone (<i>Haliotis cracherodii</i>)	E, X (NMFS)	No effect determination; no impact to coastal habitat.
Conservancy fairy shrimp (<i>Branchinecta conservatio</i>)	E, X	No effect determination; vernal pool habitat not present.
valley elderberry longhorn beetle (<i>Desmocerus californicus dimorphus</i>)	T, X	No effect determination; although suitable habitat may be present along riparian corridors, no land use change, conversion of habitat, construction or modification of existing facilities would occur as a result of the Proposed Action.
vernal pool fairy shrimp (<i>Branchinecta lynchi</i>)	T, X	No effect determination; vernal pool and other seasonal pool habitat not present.
white abalone (<i>Haliotis sorenseni</i>)	E, X (NMFS)	No effect determination; no impact to coastal habitat.
Mammals		
blue whale (<i>Balaenoptera musculus</i>)	E (NMFS)	No effect determination; Action Area is outside species' range.
fin whale (<i>Balaenoptera physalus</i>)	E (NMFS)	No effect determination; Action Area is outside species' range.
Fresno kangaroo rat (<i>Dipodomys nitratoideus exilis</i>)	E, X	No effect determination; Action Area is outside species' range.
giant kangaroo rat (<i>Dipodomys ingens</i>)	E	No effect determination; native lands and lands fallowed and untilled for three or more years would not be brought into production as part of the Proposed Action.
Guadalupe fur seal (<i>Arctocephalus townsendi</i>)	T (NMFS)	No effect determination; Action Area is outside species' range.
humpback whale, Central America DPS, Western North Pacific DPS (<i>Megaptera novaeangliae</i>)	E (NMFS)	No effect determination; Action Area is outside species' range.
North Pacific right whale (<i>Eubalaena japonica</i>)	E (NMFS)	No effect determination; Action Area is outside species' range.
San Joaquin kit fox (<i>Vulpes macrotis mutica</i>)	E	No effect determination; Action will not impact upland habitat.
sei whale (<i>Balaenoptera borealis</i>)	E (NMFS)	No effect determination; Action Area is outside species' range.
southern resident killer whale (<i>Orcinus orca</i>)	E (NMFS)	No effect determination; Action won't affect Chinook salmon prey availability.
sperm whale (<i>Physeter macrocephalus</i>)	E (NMFS)	No effect determination; Action Area is outside species' range.
Steller sea lion (<i>Eumetopias jubatus</i>)	E (NMFS)	No effect determination; no impact to coastal habitat.

Species	Status ¹	Effects
Plants		
palmate-bracted bird's-beak (<i>Cordylanthus palmatus</i>)	E	No effect determination; suitable alkali scrub habitat not present.
San Joaquin woolly-threads (<i>Monolopia congdonii</i>)	E	No effect determination; species requires native upland arid grassland and shrub habitat.
Reptiles		
blunt-nosed leopard lizard (<i>Gambelia sila</i>)	E	No effect determination; species requires native upland arid grassland and shrub habitat.
giant garter snake (<i>Thamnophis gigas</i>)	T	May affect, not likely to adversely affect. Minor water quality impacts would occur in Mud Slough, which is habitat for this species, although there have been no giant garter snakes found in recent surveys.
East Pacific green sea turtle (<i>Chelonia mydas</i>)	T (NMFS)	No effect determination; no impact to coastal habitat.
leatherback sea turtle (<i>Dermochelys coriacea</i>)	E (NMFS)	No effect determination; no impact to coastal habitat.
North Pacific loggerhead turtle (<i>Caretta caretta</i>)	E (NMFS)	No effect determination; no impact to coastal habitat.
olive Ridley turtle (<i>Lepidochelys olivacea</i>)	E (NMFS)	No effect determination; no impact to coastal habitat

¹ Status = Status of federally protected species protected under the Endangered Species Act.

E: Listed as Endangered

NMFS: Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service

T: Listed as Threatened

PX: Proposed critical habitat

X: Critical Habitat designated for this species

² Note that lists were for the entire county or counties that encompass the districts.

³ Distinct Population Segment

3.2.2 Environmental Consequences

No Action

Under the No Action Alternative, storm water (containing selenium and other potential constituents of concern) would flow generally from south to north in regional drainage channels within the GDA. Some of the storm water flows would be diverted into short-term storage basins, however the excess storm water flows would continue to flow in a northerly direction and become impounded against the levees of the Central California Irrigation District Outside and Main Canals, where it would overtop the banks of the regional drains and flood adjacent fields, creating unmanaged shallow ponded areas that would become attractive to wildlife. Without any discharge outlet, these ponded areas would continue to expose wildlife to elevated selenium levels until the ponded water evaporated or seeped into the shallow water table. The Western Burrowing Owl, Swainson's Hawk, and San Joaquin kit fox may experience greater temporary habitat losses with less well controlled flooding.

The Authority would distribute storm water detained within the short-term storage basins to the SJRIP as soon as reuse capacity was available, with the expectation that the ponds would be completely emptied by late spring. The Authority would maintain the short-term storage basins in a manner that would reduce their attractiveness to migratory birds and other wildlife as

described under their long-term stormwater management plan (San Luis & Delta-Mendota Water Authority 2019b).

During extremely wet events, where ponded water jeopardized the integrity of regional water conveyance systems, storm water flows may be diverted to the wetland supply channels to protect the canals. Under this condition, anadromous fishes and critical habitat for the Central California steelhead, as well as Essential Fish Habitat for spring-run and fall-run chinook salmon would be affected by increased selenium levels as flows overflow existing channels and enter the wetlands and Mud Slough.

Proposed Action

Under the Proposed Action, storm-induced flooding would be better controlled than it would be under the No Action Alternative, which would likely reduce the amount of selenium contamination of aquatic habitat and minimize the temporary losses of upland habitat. The regulating basins and SJRIP would be used in the same manner as under the No alternative, and the maintenance of the regulating basins would likewise be done in a manner to discourage use by migratory birds and other wildlife. As shown in Figure 6, selenium concentrations in the San Joaquin River at Crows Landing have been below thresholds of concern since 2015. This trend is expected to continue as current discharges of storm-induced flows without subsurface drainage discharges would continue. In addition, conservation measures included in the Proposed Action, which includes the addition of additional monitoring and reporting of constituents which may be of concern for listed species, would minimize impacts to Federally protected species and other biological resources that could be impacted by the project. These new monitoring and reporting actions include a new monitoring site at the San Joaquin River at Freemont Ford (Site G); monitoring and reporting for oil, grease, and hydrocarbons; and monitoring and reporting of nutrients which may include ammonia (as N), nitrate (as N), and total phosphorous. Potential impacts to biological resources from the Authority and GAF's proposed infrastructure improvements are being addressed pursuant to CEQA and are not part of the federal action analyzed herein.

Cumulative Impacts

The GBP has substantially improved water quality in aquatic habitat in the Proposed Action Area. At the same time, habitat for Federally protected species has been lost and degraded by land use changes and other factors not related to the GBP. Ongoing cumulative effects include the following:

- Water management such as diversions, levee maintenance and riprapping, channel dredging, channel enlargement, flood control projects, drainage pumps, diversion pumps, siphons, and changes in water management.
- Introduction of non-native fish, wildlife and plants, inbreeding of small populations, and genetic isolation.
- Discharges into surface waters including point source discharges (permitted) and non-point source runoff such as mining runoff, runoff from high-density confined livestock production facilities, runoff from copper sulfate foot baths associated with dairy farms, agricultural irrigation drainwater discharges (surface and subsurface), runoff from overgrazed rangelands, municipal and industrial storm water discharges (permitted and non-permitted), and other illegal, non-permitted discharges.

- Land management practices including fluctuations in agricultural land crop production, plowing, discing, grubbing, irrigation canal clearance and maintenance activities, levee maintenance, permitted and non-permitted use and application of pesticides, herbicides, fungicides, rodenticides, fumigants, fertilizers and other soil water amendments, urban development, urban refuse disposal, land conversions, illegal fill of wetlands and conversion and reclamation of wetland habitats.
- Recreational disturbances, vandalism, road kills, off-road vehicle use, chronic disturbance, noise, disturbances from domestic dogs and equestrian uses.
- Habitat loss and degradation affecting both animals and plants continues as a result of urbanization, road and utility right-of-way management, flood control projects, overgrazing by livestock, and continuing agricultural expansion.
- Poisoning, shooting, increased predation associated with human development, and reduction of food sources.
- Pesticide use in the vicinity of the Action Area. Pesticides of all types, including herbicides, are widely used in California, particularly in the San Joaquin Valley. Chemicals applied nearby may drift or run off into contact with listed species. Pesticides are sometimes applied directly to pools, for mosquito abatement.

As the Proposed Action will have only minor impacts to Federally protected species and habitats, the cumulative contribution will be small.

3.3 Water Resources

3.3.1 Affected Environment

The Action Area includes areas located in the western San Joaquin valley from the GDA in the south to the San Joaquin River at Crows Landing in the north (Figure 1).

San Luis Drain

Since 1996, a portion the San Luis Drain has been used to convey agricultural subsurface drainwater and stormwater from the GDA to Mud Slough (North). The commingled drainwater from the respective districts' drainage channels remaining after on-farm and in-district management is reused in the SJRIP or conveyed to the Grassland Bypass Channel, a 4-mile-long earthen ditch constructed between the Panoche and Main drains and the Drain at Russell Avenue (San Luis & Delta-Mendota Water Authority 2019b). The Drain is a federal canal with a capacity of 300 cfs; however, flow into the Drain from the GDA is limited to 150 cfs and velocity is limited to 1 foot per second because the connection facilities between the GDA and the Drain are limited to 150 cfs and to avoid disturbance of sediments in the Drain (San Luis & Delta-Mendota Water Authority 2019b). As noted in Section 1.1, since 2015 the only flows discharged from the Drain to Mud Slough (North) are storm-induced. This water is introduced from the GDA into the Drain at Site A and discharged from the Drain to Mud Slough (North) at Site B (Figure 1). The distance between the Sites A & B is approximately 28 miles with storm flows taking about a day to travel between them (San Luis & Delta-Mendota Water Authority 2019b).

Grassland Drainage Area

The location of the Authority's long-term stormwater management project is the Grasslands Watershed in Fresno and Merced Counties, which ultimately discharges into the Lower San Joaquin River (Figure 1). Average annual precipitation at the Los Banos Detention Reservoir Precipitation Gauge is approximately 9 inches per water year but varies from 3.5 to 24 inches. Rainfall is also highly variable by location within the GDA and location affects management capability. Storm water flows are generated by rainfall throughout the GDA primarily between November through April, which flow overland into several regional drains. Rainfall collected in these open drains is currently discharged to the GBP (San Luis & Delta-Mendota Water Authority 2019a).

The alluvial fans of the western and southern portions of the watershed contain naturally occurring salts and selenium, including boron and molybdenum, which originate from marine sediments in the Coast Range. In addition to the naturally occurring salts and trace elements found in the historic marine sediments, high levels of evapotranspiration increase salt concentrations in the soil. Application of irrigation water dissolves these salts and trace elements, accelerating their movement into shallow groundwater. Approximately half of the soluble salts in the crop root zone are derived from the soil. Agricultural drains have been installed in sections of the GDA to lower the water table resulting in drainwater with high constituent concentrations discharging to the lower San Joaquin River under the GBP (San Luis & Delta-Mendota Water Authority 2019a).

As noted in Section 1.1, overall discharges under the GBP (measured at Site A) has been reduced by approximately 90 percent with a similar reduction in selenium, salt, and boron loads. However, although there has been a substantial reduction in salts discharged under the GBP, salinity concentrations at Site A increased some since 2013, likely due to many factors affecting regional water quality such as the recent drought and increased evapotranspiration (San Luis & Delta-Mendota Water Authority 2019a). The Authority has proposed under their long-term stormwater management plan to implement measures to minimize potential contributions from the GDA (e.g., remotely turning of tile sumps during storm events, adding holding basins, and improving infrastructure to maximize circulation) that will be implemented with or without the Proposed Action (San Luis & Delta-Mendota Water Authority 2019b).

Mud Slough (North) and the Lower San Joaquin River to Crows Landing

The San Joaquin River flows through the eastern portion of the Project Area, down the center of the San Joaquin Valley. In the northern reaches of the Project Area, the river flows through San Luis National Wildlife Refuge, which also contains Mud Slough and Salt Slough, each a tributary to the river. Flows in and to the San Joaquin River play a major role in dictating water quality in the river. From a regional perspective, flows in the San Joaquin River are controlled mostly by dams on east-side tributaries and on the mainstem upstream from Fresno. Prior to October 2009, the lower San Joaquin River received very little inflow from water stored in Millerton Lake; however, San Joaquin River Restoration Flows are released from Friant Dam to the San Joaquin River in accordance with an approved restoration flow schedule based on water year type. With the exception of flood flows which are routed through flood control channels that bypass sections of the river, releases from Friant Dam are currently limited to the carrying capacity of the most constrained river reach (San Luis & Delta-Mendota Water Authority 2019a).

Storm induced flows currently travel through the Drain under the GBP and discharge into Mud Slough six miles upstream of its confluence with the San Joaquin River. Flow in Mud Slough (North) upstream of the Drain's discharge point consists of wetland releases from the northern and southern Grasslands Water District and from Volta Wildlife Management Area, as well as operational spills from the Delta-Mendota Canal and Central California Irrigation District's Main Canal and flows from Los Banos Creek. Mud Slough (North) downstream of the Drain's discharge point is often dominated by water originating from GDA via the Drain, but it also carries a blend of subsurface tile drainage water and discharges from surrounding duck clubs (San Luis & Delta-Mendota Water Authority 2019b).

Water Quality

The Regional Board's water quality objectives and performance goals for selenium, boron, and molybdenum for the lower San Joaquin River watershed are included in Table 4. After December 31, 2019, the water quality objectives in Mud Slough (North) will change from a 15 µg/L monthly mean to a 5 µg/L 4-day average.

Table 4 Water Quality Objectives for the Lower San Joaquin River

Waterbody	Selenium	Boron	Molybdenum
Mud Slough (North) and the San Joaquin River from Sack Dam to the mouth of the Merced River	5 µg/L, 4-day average (Water Quality Objective) 15 µg/L, monthly mean (performance goal, 2016-2019) 20 µg/L, maximum	2.0 mg/L, monthly mean, March 15-September 15 5.8 mg/L, maximum	19 µg/L, monthly mean 50 µg/L, maximum
San Joaquin River, from Merced River to Vernalis	5 µg/L, 4-day average 12 µg/L, maximum	Dry Season (March 15 to September 15): 0.8 mg/L, monthly mean 2.0 mg/L, maximum Wet Season (September 16 to March 14): 1.0 mg/L, monthly mean 2.6 mg/L, maximum Critical Year: 1.3 mg/L, monthly mean	10 µg/L, monthly mean 15 µg/L, maximum
Salt Slough	2 µg/L, monthly mean 20 µg/L, maximum	March 15-September 15 5.8 mg/L, maximum	19 µg/L, monthly mean 50 µg/L, maximum
Water Supply Channels in the Grassland Watershed	2 µg/L, monthly mean 20 µg/L, maximum		

Source: Regional Board 2018

mg/L = milligrams per liter

µg/L = micrograms per liter

Selenium

As shown in Figure 7, selenium concentrations at Site D have generally decreased between 2010 and 2015 with a much more substantial decrease after 2015 when agricultural drainage discharges ceased. It should be noted that the mean selenium concentration measured at Site D

between 1996-2014 was 16.5 µg/L. Data acquired after agricultural drainage was ceased (2015-2019) shows an average mean selenium concentration of 1.78 µg/L as shown in Figure 7.

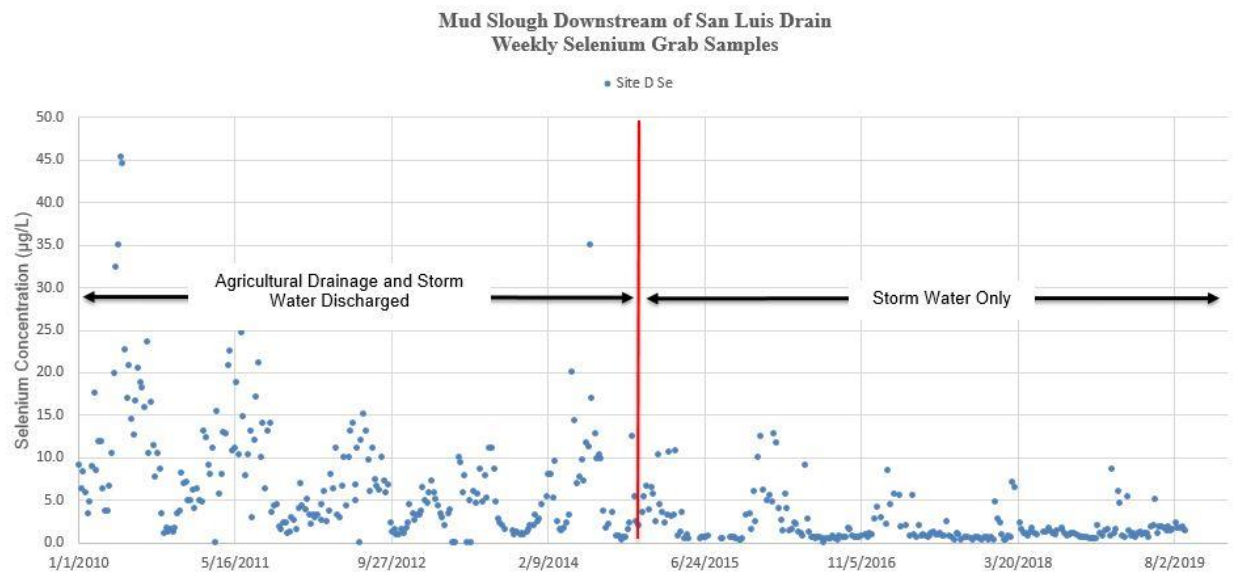


Figure 7 Selenium Concentrations (µg/L) at Site D 2010-2019

At Site R (confluence of the Mud Slough and the San Joaquin River), water quality data has only been measured since 2013 (Figure 8). Data from this period showed an average mean selenium concentration of 1.02 µg/L. Data acquired since agricultural drainage ceased (2015-2019) shows the mean selenium concentration to be 0.49 µg/L.

As shown in Figure 6, selenium concentrations at Site N (San Joaquin River at Crows Landing) have been gathered since May of 1985. Measured selenium concentrations from grab samples for the monitoring period prior to implementation of the GBP (1985-1996) ranged from less than 0.44 µg/L to 12.0 µg/L with an average concentration of 4.99 µg/L. Measured selenium concentrations for the monitoring period between the implementation of the GBP and the time when agricultural drainage ceased (1996-2014) ranged from less than 0.22 to 7.7 µg/L with an average concentration of 1.88 µg/L. Data acquired after agricultural drainage was ceased (2015-2019) shows a range between 0.2 µg/L to 1.29 µg/L with an average mean selenium concentration of 0.42 µg/L.

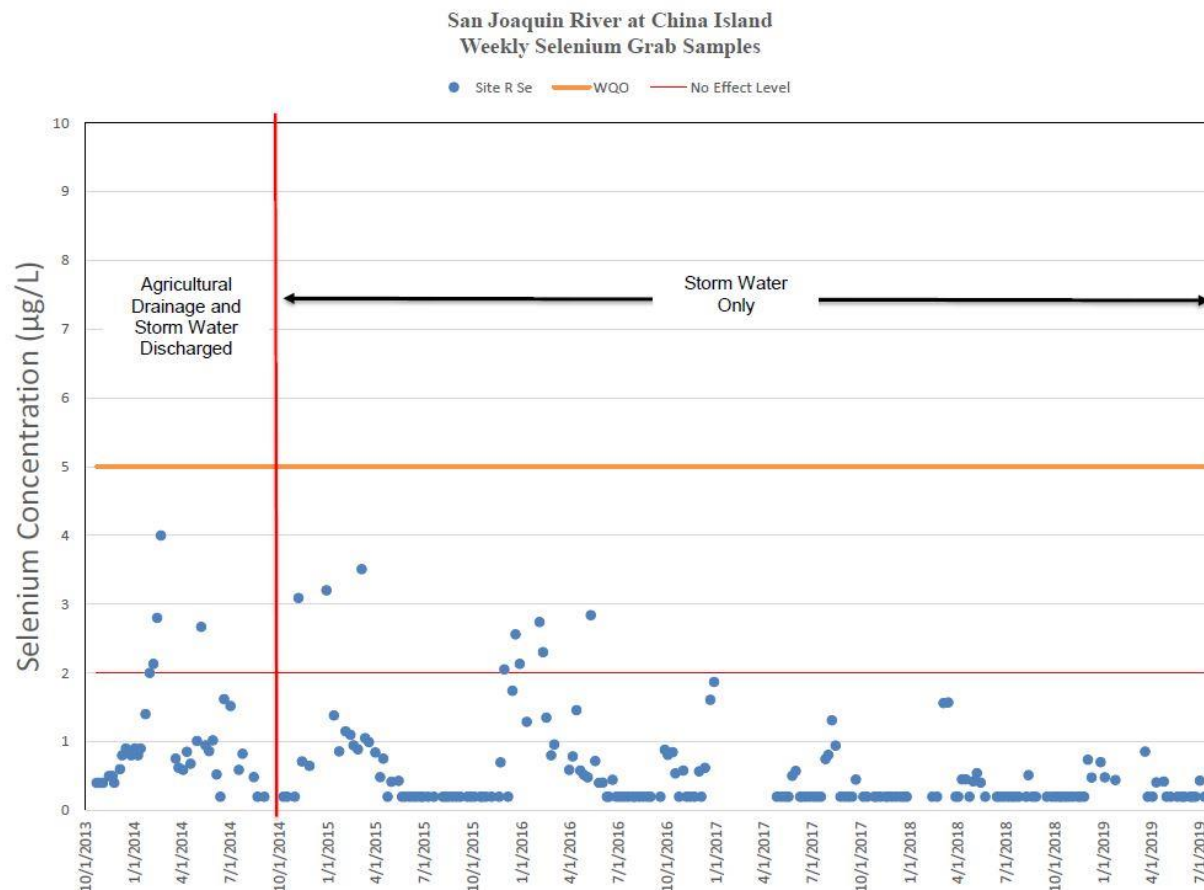


Figure 8 Selenium Concentrations (µg/L) at Site R

Boron

As shown in Table 5, there were 17 exceedances of the 2.0 mg/L monthly mean for boron at Site D between 15 March and 15 September for the period 2015-2019 when only storm flows were being discharged from the Drain. Nine of the 17 exceedances occurred during months when flows were not being discharged from the GDA. These nine exceedances represent background boron levels in Mud Slough that exceed the Regional Board's water quality objective without contribution from the Drain.

Table 5 Monthly Boron Averages (mg/L) at Site D 2015-2019

Month	2015	2016	2017	2018	2019
January	7.5	5.9	1.8	2.8	3.4
February	4.6	3.9	2.6	1.8	3.6
March	5.1	3.4	1.8	3.5	2.0
April	4.0	3.3	2.7	2.3*	1.7*
May	3.2	4.0	2.5*	1.8*	1.7
June	8.5*	2.2*	1.1*	2.4*	2.3
July	11*	2.6*	2.6*	2.1*	1.7*
August	1.3*	1.1*	1.9*	2.2*	1.8*

Month	2015	2016	2017	2018	2019
September	0.8*	1.6*	0.9*	1.1*	1.6*
October	1.3*	1.3	0.8*	0.9*	
November	5.2	1.2	0.9*	1.2	
December	8.1	2.8	1.5*	2.3	

*Months when GDA was not discharging flow into the San Luis Drain

During 2015-2019 there was only 1 exceedances of the 2.0 mg/L monthly mean at Site R (confluence of Mud Slough and the San Joaquin River) between 15 March and 15 September (Table 6).

Table 6 Monthly Boron Averages (mg/L) at Site R 2015-2019

Month	2015	2016	2017	2018	2019
January	2.4	1.5	NA	NA	0.9
February	2.2	1.8	NA	0.9	NA
March	2.5	1.7	NA	1.0	0.6
April	1.9	1.7	0.4	0.7*	0.54*
May	1.2*	1.7	0.37*	0.65*	0.3
June	1.2*	1.0*	0.3*	0.47*	0.1
July	0.63*	0.82*	0.58*	0.34*	0.35*
August	0.42*	0.65*	1.89*	0.29*	0.34*
September	0.71*	1.18*	0.32*	0.37*	0.43*
October	0.61*	1.2	0.44*	0.56*	
November	1.4	1.0	0.58*	0.7	
December	2.2	1.7	0.75*	1.1	

* Months when GDA was not discharging flow into the San Luis Drain

During 2015-2019 there were three exceedances of the monthly mean threshold for boron at Site N (Table 7). These exceedances occurred in 2015 and 2016 during California's worst drought. The Regional Board's water quality objective during the drought for boron was 1.3 mg/L.

Table 7 Monthly Boron Averages (mg/L) at Site N 2015-2019

Month	2015	2016	2017	2018	2019
January	1.3	0.6	0.3	0.8	0.7
February	1.4	1.1	0.1	0.7	0.3
March	1.8	0.9	0.1	0.9	0.3
April	1.3	1.4	0.1	0.24*	0.24*
May	0.77*	0.8	0.06*	0.36*	0.1
June	0.8*	0.82*	0.04*	0.37*	0.1
July	0.59*	0.67*	0.2*	0.36*	0.23*
August	0.64*	0.53*	0.3*	0.29*	0.21*

Month	2015	2016	2017	2018	2019
September	0.5*	0.74*	0.12*	0.17*	0.09*
October	0.35*	0.6	0.14*	0.33*	
November	0.3	0.6	0.38*	0.5	
December	1.2	1.0	0.52*	0.8	

Molybdenum

As shown in Table 8, there were nine exceedances at Site D of the 19.0 µg/L monthly mean for molybdenum for the period 2015-2019 when only storm flows were being discharged from the Drain. Seven of the 10 exceedances occurred during months when flows were not being discharged from the GDA. These seven exceedances represent background molybdenum levels in Mud Slough that exceed the Regional Board's water quality objective without contribution from the Drain.

Table 8 Monthly Molybdenum Averages (µg/L) at Site D 2015-2019

Month	2015	2016	2017	2018	2019
January	16	12	4	11	21
February	14	12	5	19	8.8
March	12	11	6	9	8
April	20	11	9	19*	15*
May	NA	15	10*	NA	11
June	22*	18*	12*	41*	21
July	22*	13*	12*	39*	22*
August	NA	7*	4*	16*	26*
September	NA*	11*	NA	16*	25*
October	NA*	10	8*	10*	
November	18	12	7*	11	
December	18	14	14*	16	

* Months when GDA was not discharging flow into the San Luis Drain

There were no exceedances at Site R (Table 9) or Site N (Table 10).

Table 9 Monthly Molybdenum Averages (µg/L) at Site R 2015-2019

Month	2015	2016	2017	2018	2019
January	13	NA	NA	NA	NA
February	10	10	NA	NA	NA
March	11	NA	NA	3	4
April	14	11	3	7*	5
May	13*	10	6*	NA	2
June	14*	9*	1*	7	2
July	NA	7*	11*	6	5*

August	9*	6*	5*	6	6.9*
September	13*	10*	NA	8	6.3*
October	9*	9	5*	7	
November	10	9	5*	6	
December	9	10	7*	NA	

* Months when GDA was not discharging flow into the San Luis Drain

Table 10 Monthly Molybdenum Averages (µg/L) at Site N 2015-2019

Month	2015	2016	2017	2018	2019
January	8	4	2	5	6
February	8	7	2	6	2
March	10	2	1	3	2
April	9	8	1	2*	2.8*
May	6.5*	7	2*	NA	1
June	6.5*	8*	1*	7*	1
July	5.5*	6*	4*	6*	3.3*
August	6*	6*	3*	5*	2.9*
September	5*	7*	NA	3*	1*
October	1*	3	3*	5*	
November	4	6	4*	4	
December	4	6	5*	5	

Salts (Electrical Conductivity)

Explicit salinity limits are not included in the WDR for the GBP. The Basin Plan requires that dischargers must: 1) participate in a Regional Board approved real-time management program; or 2) submit a management plan that is designed to meet the Base Salt Load Allocations per the Basin Plan. The GAF are currently part of the board-approved real-time management program.

Monthly and annual salt load allocations are part of the GBP's Third Use Agreement (2010-2019) and are calculated using electrical conductivity (EC) and flow and are based on water year type. EC and flow data are measured where drainage water leaves the Grassland Bypass Channel and enters the Drain. Discharged loads from the Drain are compared to annual load allocation limits in Figure 9. Annual salt loads have been below the salt load allocation limits during the Third Use Agreement.

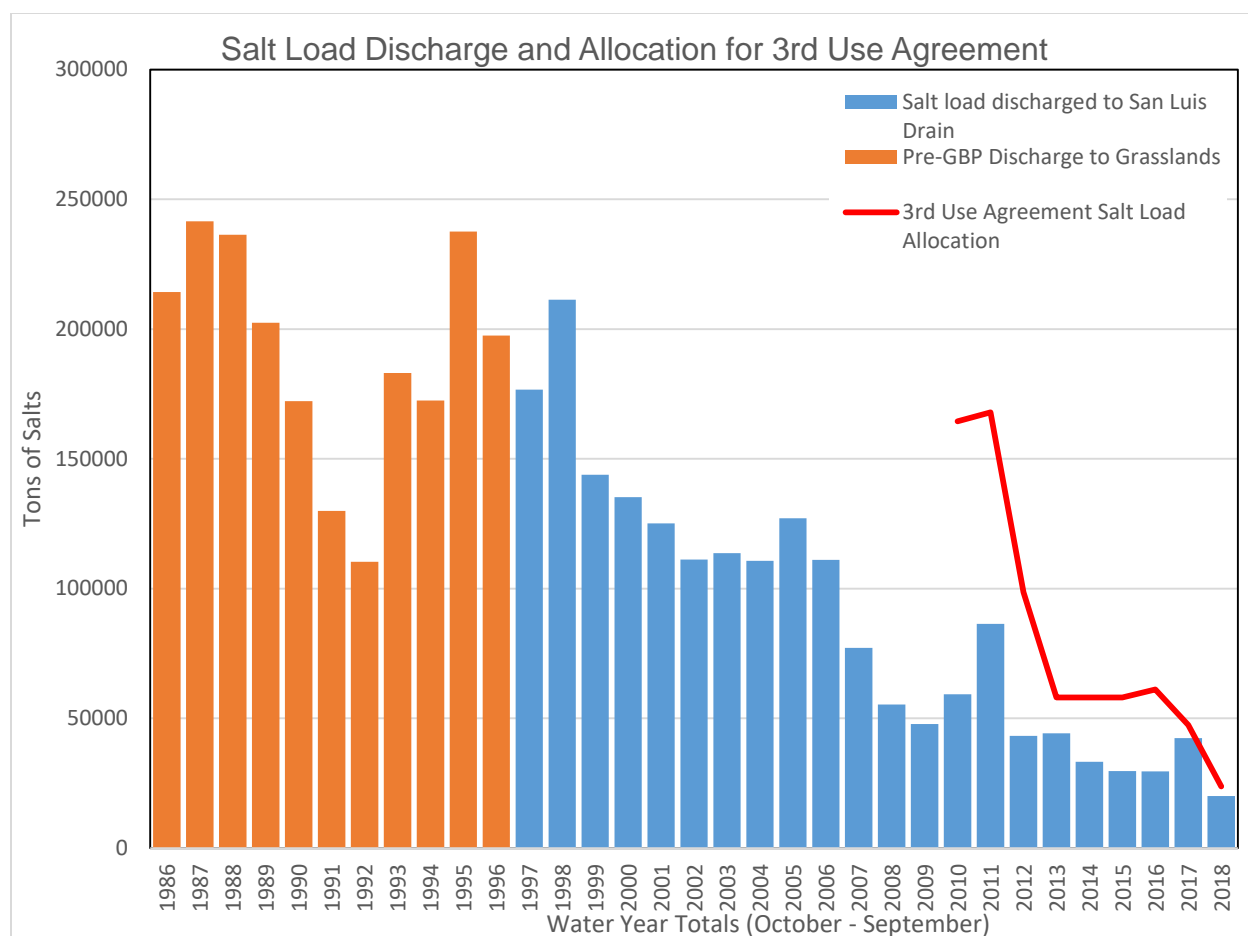


Figure 9 Salt Load Discharged to the Drain and Salt Load Allocations under GBP

New water quality objectives for the Lower San Joaquin River were adopted by the Regional and State Boards. During the non-irrigation season, the EC objective is 1,550 micromhos/cm as a 30-day running average except during extended dry periods when concentrations shall not exceed 2,470 micromhos/cm. The peak salt load discharged from the Drain since the inception of the GBP in 1997 was 220,000 ton. This has since been reduced by 80 percent to less than 50,000 ton (San Luis & Delta-Mendota Water Authority 2019a).

The Authority estimated salt loads at Site N attributable to the proposed storm water discharges and found that water quality objectives were not exceeded (see Figure 19 in San Luis & Delta-Mendota Water Authority 2019a).

3.3.2 Environmental Consequences

No Action

As described in Section 1.3, the GAF have and will implement improvements within the GDA that do not involve use of the Drain to assist with managing stormflows, including expansion and ongoing operation of the SJRIP. These will continue with or without the Proposed Action. Currently, storm-induced flows are managed under the GBP; however, this will cease at the end of 2019. As noted in Section 1.1, the SJRIP is not able to manage all storm forms once sufficient

rainfall has occurred. At this point, without introduction to the Drain, stormwater and accreted shallow groundwater would accumulate in the regional drains and flow north ponding against canal levees or discharging into sensitive wetland channels potentially adversely impacting water quality and threatening existing infrastructure.

Proposed Action

Under the Proposed Action, Reclamation would allow the continued use of 28 miles of the Drain to its northern terminus at Site D. From that point, the storm water would enter Mud Slough (North) for six miles before reaching the San Joaquin River at a location three miles upstream of its confluence with the Merced River. Reclamation's water sampling at Crows Landing (daily and weekly sampling since 2015) has shown selenium levels to be below 2.0 µg/L (Table 1). During that time, there have only been five exceptions: daily samples (March 26-28, 2015 and May 11 and 12, 2016) during the recent drought of record that exceeded this level, the highest being 3.18 µg/L (Figure 6). Examining more recent data, monthly averages in 23 of the 57 months sampled since January 2015 have been below 0.4 µg/L, which is considered the upper limit of background levels of selenium for freshwater (USDOI 1998). Despite the fact that water quality over the 10-year period of this action are anticipated to be similar to what has occurred since 2015, dependent on hydrologic conditions, and is not expected to adversely impact water quality or beneficial uses, Reclamation has included additional monitoring and reporting actions in the 10-year Proposed Action. These new monitoring and reporting actions include a new monitoring site at the San Joaquin River at Freemont Ford (Site G); monitoring and reporting for oil, grease, and hydrocarbons; and monitoring and reporting of nutrients which may include ammonia (as N), nitrate (as N), and total phosphorous.

Cumulative Impacts

While the GBP has substantially improved water quality in the Proposed Action Area, water quality continues to be degraded by land use changes and other factors. Ongoing cumulative effects include the following:

- Water management such as diversions, levee maintenance and riprapping, channel dredging, channel enlargement, flood control projects, drainage pumps, diversion pumps, siphons, and changes in water management.
- Discharges into surface waters including point source discharges (permitted) and non-point source runoff such as mining runoff, runoff from high-density confined livestock production facilities, runoff from copper sulfate foot baths associated with dairy farms, agricultural irrigation drainwater discharges (surface and subsurface), runoff from overgrazed rangelands, municipal and industrial storm water discharges (permitted and non-permitted), and other illegal, non-permitted discharges.
- Land management practices including fluctuations in agricultural land crop production, plowing, disking, grubbing, irrigation canal clearance and maintenance activities, levee maintenance, permitted and non-permitted use and application of pesticides, herbicides, fungicides, rodenticides, fumigants, fertilizers and other soil water amendments, urban development, urban refuse disposal, land conversions, illegal fill of wetlands and conversion and reclamation of wetland habitats.
- Pesticide use in the vicinity of the GDA, the Grassland Bypass Channel, and the Grassland Water District. Pesticides of all types, including herbicides, are widely used in

California, particularly in the San Joaquin Valley. Chemicals applied nearby may drift or run off into the waters of the Action Area. Pesticides are also sometimes applied directly to pools, for mosquito abatement.

As the Proposed Action is anticipated to continue improving water quality above current levels or only temporarily exceed established thresholds that would have minor impacts to water quality, it is not anticipated to have a cumulatively considerable contribution to water quality impacts.

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Section 4 Consultation and Coordination

4.1 Public Review Period

Reclamation provided the public with an opportunity to comment on Draft EA between December 9, 2019 and December 23, 2019. Two comment letters from public agencies and five comment letters from private individuals/organizations were received and are included as Appendix A of this Final EA.

Several of the comment letters included conclusory position statements about the GBP, SLDFR and associated Court declarations, as well as the SLDFR Demonstration Treatment Plant and associated 2018 Office of Inspector General Report. None of these comments address the analysis in the EA, and as such, no responses to these statements are necessary. Substantive comments related to Reclamation's Proposed Action and analysis are addressed below.

Request for an extension of the two-week comment period, public hearing, an EIS, and Failure to Comply with NEPA

One comment letter was received requesting an extension of the comment period, a public hearing, and preparation of an EIS. Several comments indicated that Reclamation failed to comply with NEPA.

Reclamation disagrees. Although NEPA does not require an EA to be released for public review, Reclamation did so in order to be open and transparent, gather public input, and to further inform decision making. Pursuant to 40 CFR 1506.6(b), Reclamation publicly noticed the availability of the Draft EA on December 9, 2019. As noted in the majority of the comment letters, notification of the availability of the Draft EA was received. Additional comments by the same parties requesting the extension were also received during the discretionary public review period and are also being addressed herein.

EA-19-029 and its scope of analysis were developed consistent with NEPA regulations, guidance from the Council on Environmental Quality (CEQ), and the Department of the Interior's NEPA regulations. In accordance with NEPA, an EA is initially prepared to determine if there are significant impacts on the human environment from carrying out the Proposed Action. Reclamation has followed applicable procedures in the preparation of EA-19-029 which includes the required components of an EA as described in the CEQ's NEPA regulations (40 CFR 1508.9): discussion of the need for the proposal, alternatives as required, environmental impacts of the proposed action and alternatives, and listing of agencies and persons consulted. An EA is defined by CEQ as a "concise public document" that "briefly provide[s] sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact" (40 CFR 1508.9). Analysis of Reclamation's Proposed Action in the Draft EA indicated that preparation of an EIS or Supplemental EIS or holding a public hearing is not warranted.

Lack of Authorization to Use the San Luis Drain to Convey Stormwater

Two commenters indicated that Reclamation did not have the authority to use the Drain to convey stormwater without additional Congressional authorization and failed to comply with the Reclamation Wastewater and Groundwater Study Act of 1992, Pub. L. No. 102-575, §§ 1601-1617, 106 Stat. 4600, 4663 and the Central Valley Project Improvement Act (CVPIA).

Reclamation disagrees. The authority to enter into use agreements to convey stormwater for the purpose of controlling floods in the Drain is provided pursuant to the San Luis and CVP Authorization acts as noted below:

Public Law 86-488, Section 5 states:

In constructing, operating, and maintaining a drainage system for the San Luis unit, the Secretary is authorized to permit the use thereof by other parties under contracts the terms of which are as nearly similar as is practicable to those required by the Federal reclamation laws in the case of irrigation repayment of service contracts and is further authorized to enter into agreements and participate in construction and operation or drainage facilities designed to serve the general area of which the lands to be served by the San Luis unit are a part, to the extent the works authorized in section 1 of this Act contribute to the drainage requirements of said area.

CVP Authorizations Act of 1937, Section 2 states (emphasis added):

...the entire Central Valley project...is hereby reauthorized and declared to be for the purposes of improving navigation, regulating the flow of the San Joaquin River and the Sacramento River, **controlling floods**, providing for storage and for the delivery of the stored waters thereof...

Federal Nexus and Scope of Analysis

A few commenters stated that Reclamation does have a federal nexus outside approval of the use of the Drain to convey storm-induced flows and should include analysis of the non-federal components of the Authority's long-term stormwater management plan including expansion of the SJRIP and use of stormwater detention basins. A few commenters stated that the Proposed Action included increased impacts beyond those addressed by the GBP 2009 EIS/EIR.

Reclamation disagrees. As noted in Section 1.3, "Panoche Drainage District has received a State of California Proposition 84 grant to upgrade storm water management infrastructure. These upgrades include the expansion of the SJRIP reuse area, additional drainage tiles, new tile sumps, new tile sump pump stations, new pipelines, ditch extension/canal linings, short-term storage basins, and installation of a Supervisory Control and Data Acquisition (SCADA) system with associated communication system (meters, communication towers, and new power line) for remote operation of the tile sump pumps within the GDA. These upgrades have been and will continue to be implemented by Panoche Drainage District with or without Reclamation's approval of the Proposed Action." Further, as noted in Section 2.1, the "GAF would continue to implement current storm water management actions that do not include use of the Drain after

December 2019 as described in the Authority’s long-term storm water management plan (San Luis & Delta-Mendota Water Authority 2019a, 2019b).”

Impacts related to the non-federal actions, including potential impacts from temporarily ponding storm-induced flows in the existing and proposed stormwater detention basins, were addressed in the Authority’s California Environmental Quality Act (CEQA) documentation.

As Reclamation has no authority or involvement in these actions and they would continue with or without Reclamation’s action, Reclamation appropriately limited its scope of analysis to the use of the Drain for conveyance of storm-induced flows – its sole federal action. Reclamation’s Proposed Action does not cover or allow the introduction, conveyance, or discharge of agricultural drainage. It should be noted, that storm-induced flows generally occur outside the irrigation season when agricultural drainage is not being produced and that the Authority and GAF have included closing off drainage sumps during stormwater events in order to prevent introduction of subsurface agricultural drainage.

Time Period Discrepancies and Term of the Long-term Stormwater Project

Several comments noted that there are “discrepancies” in time periods associated with the project and that the “NEPA requires a stable project”. Other comments requested shorter terms for the use agreement to allow further stakeholder involvement in a longer term use agreement. As noted in the comment letters, the Authority’s approved CEQA document covers a 25-year period for their proposed Plan and the WDR approved by the Regional Board covers a 25-year period with a 2-year review. However, as noted in Section 2.2, Reclamation’s Proposed Action is to “allow the Authority to continue to introduce and convey up to 150 cfs of storm-induced flows through the Drain, consistent with permitting from the Regional Board, over a 10-year period.” Only a signed new Use Agreement between Reclamation and the Authority can authorize use of the Drain after December 31, 2019 and only up to the time period and actions covered within Reclamation’s NEPA analysis.

No Use Agreement Provided as Part of the EA

Several commenters stated that the EA was inadequate as it did not include a draft of the proposed Use Agreement precluding comment or analysis.

Reclamation disagrees. EA-19-029 included the project description for the proposed use agreement, including the potential term (i.e. up to 10 years) and the actions associated with the use of the Drain (i.e. maximum introduction/flow, water quality criteria, and monitoring requirements) and analyzed the potential effects of those on the human environment. There is no requirement that a draft Use Agreement or any contract be included as part of the NEPA analysis. However, should any potential terms of the Use Agreement substantially change the project description or fall outside the analysis contained within the EA and its associated ESA consultations, additional environmental review would be needed.

New Information on Environmental Effects of GBP Discharges to Sacramento Splittail

Several comments noted that there is new information related to GBP discharges and their environmental effects related to Sacramento splittail deformities.

Reclamation is aware of the recent findings by Dr. Rachel Johnson. A presentation was given at the State of the Estuary Conference in 2019 concerning the Sacramento splittail deformities. However, to date the study has not been published or peer reviewed and there is no clear evidence that the deformities are specifically tied to GBP discharges. As shown in Figure 6, monthly average selenium concentrations in the San Joaquin River at Crows Landing have been below thresholds of concern (i.e. 2 µg/L) since 2015 (when agricultural discharges ceased) and are often non-detect. As noted in Section 3.2.1, this is the furthest extent of Reclamation's Proposed Action area and was agreed to by the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS). Downstream of this point, the Proposed Action would not have any measurable impact on biological resources. It should be noted that the Sacramento splittail is no longer federally listed, but does have dietary overlap with the North American green sturgeon. Reclamation consulted with NMFS on the North American green sturgeon, and addressed the potential for effects related to selenium bioconcentration for that species as described in Section 3.2. On December 27, 2019, NMFS concurred with Reclamation's determination that the Proposed Action may affect, but is not likely to adversely affect the North American green sturgeon. In addition, the Regional Board included re-opener language in the WDR in the event of regulations changes due to new scientific studies.

Failure to Comply with ESA and Incomplete Endangered Species Act (ESA) Consultations

Some commenters indicated that Reclamation failed to comply with ESA and that the EA was inadequate as it did not include completed ESA consultations with the USFWS and NMFS.

Reclamation disagrees. As a matter of process, there is no requirement to share ESA consultation documents with the public prior to preparing NEPA documentation; however, Reclamation provided a discussion of the effects to ESA listed species in the EA, and that information was the same information used to consult with the USFWS and NMFS. Reclamation is required to ensure its actions do not jeopardize the continued existence of a listed species, and through consultation with the USFWS and NMFS has done so for this project. The concurrence memorandum received from USFWS and NMFS are included as Appendix C and D, respectively.

Failure to Comply with the Clean Water Act

Several commenters stated that Reclamation has failed to comply with the Clean Water Act and that a NPDES permit was required for the Proposed Action based on a recent Court Ruling.

Reclamation disagrees. Reclamation, the Authority, and the GAF are required to comply with the Clean Water Act and therefore consulted with the Regional Board for the Proposed Action as described in Section 4.3. On December 5, 2019, the Regional Board approved a WDR for surface water discharges from the Drain into Mud Slough over a 25-year period with a 4 to 1 ruling.

The Court ruling referenced by the commenters was remanded back to the District Court for further consideration not a determination that a NPDES is required. That process is ongoing. Should there be a change in requirements, Reclamation will comply pursuant to the Clean Water Act.

Failure to Quantify Water Quality Impacts or Address Cumulative Impacts including Climate Change

A couple commenters indicated that there was no water quality analysis contained in the EA and detailed modelling was needed to address water quality impacts. Other commenters indicated that the EA did not address cumulative impacts in the Delta in relation to climate change and water quality impacts.

Reclamation disagrees. Section 3.2 and 3.3 address direct, indirect, and cumulative water quality impacts from the Proposed Action relating to major constituents of concern for the area, in particular selenium, boron, molybdenum, and salinity. In addition, Appendix D of the Authority's Initial Study contained a 21-year (1997-2017) hydrologic analysis of the likely discharge conditions and resulting water quality for critically dry, below normal, and wet water year types which was used as support for Reclamation's analysis. As noted previously, Reclamation's Action area does not include the Delta and is not addressed in the EA. Global climate change impacts from the Proposed Action as required by NEPA were addressed in Section 3.1.

Additional Water Quality Monitoring Needed

Several commenters indicated that additional monitoring of the stormwater is needed in particular as it relates to salinity, mercury, and sulfates.

Specific water quality criteria and monitoring, including those for salinity and mercury, were provided in Section 2.2.1 of EA-19-029 consistent with requirements of the Regional Board's WDR and NMFS recommendations. Neither agency requires monitoring of sulfates.

Mud Slough Water Quality Criteria not Protective

Several commenters indicated that the 5 µg/L, 4-day average water quality criteria is not protective of water quality within Mud Slough and that a 2 µg/L target be included as part of the proposed Use Agreement.

Water Quality Objectives in Mud Slough (North) and the San Joaquin River from the Mud Slough Confluence to the Merced River are 5 µg/L (4-day average) are requirements established by the Regional Board as adopted in the Basin Plan. The Regional Board is the appropriate regulatory agency responsible for determining or revising water quality objectives. In response to a similar statement made on the tentative WDRs, the Regional Board stated the following:

The Basin Plan includes consideration of what is reasonable and feasible in the adoption of water quality objectives. Due to naturally occurring selenium in the marine origin soils present in the Grassland Drainage Area, a 15 µg/L (monthly mean) performance goal for selenium, applicable through 31 December 2019, and progressively lower load limits have resulted in the Dischargers' elimination of subsurface agricultural drainage discharge during the irrigation season. However, even with the planned installation of a remote shutoff system for tile drain sumps to assist in the segregation of subsurface agricultural drainage from stormwater and the expansion of the network of existing short-term storage basins to retain peak storm flows, it is possible that occasional discharge to Mud Slough will still occur during significant storm events (to be defined in the Drainage Management Plan, see Master

Response 1). Regional Board staff recognizes the Dischargers' effort to achieve compliance with the 5 µg/L (4-day average water quality objective in Mud Sough, while also ensuring that subsurface agricultural drainage is segregated from wetland channels, as much as possible. This is an important balancing act that has taken substantial effort, in the absence of which stormwater has the potential to pond against and flow into wetland channels transporting naturally occurring selenium accumulated along its course into sensitive wetland habitat.

However, in an effort to help determine if better water quality can be achieved in these waterbodies, the Authority and GAF have agreed to make good faith efforts towards meeting a goal of 2 µg/L (monthly mean) in Mud Slough (North) and the San Joaquin River from the Mud Slough Confluence to the Merced River as part of the Use Agreement.

Land Retirement Management Strategy

One commenter indicated that land retirement is the most effective management strategy for the Proposed Action.

Reclamation disagrees. The commenter conflates agricultural drainage management under the GBP which ceased discharge in 2014 and ends December 31, 2019 with the Proposed Action which is limited to addressing storm-induced flows that can affect water quality in nearby wildlife refuges and wetlands as well as threaten existing infrastructure. Storms are naturally occurring events that Reclamation, the Authority, and the GAF has no control over. Land retirement would not address storm events or prevent storms or address the need to manage storm-induced flows whether lands are in production or not.

Reclamation has considered every comment in the comment letters. No additional information was provided that changed the analysis contained in EA-19-029.

4.2 List of Agencies and Persons Consulted

Reclamation consulted with the following regarding the Proposed Action:

- U.S. Fish and Wildlife Service
- National Marine Fisheries Service
- California Regional Water Quality Control Board, Central Valley Region

Reclamation is coordinating with the following regarding the Proposed Action:

- Grasslands Area Farmers
- San Luis & Delta-Mendota Water Authority
- Contra Costa County
- Contra Costa Water District
- The Bay Institute

4.3 Clean Water Act (33 U.S.C. § 1251 et seq.)

Section 301 of the Clean Water Act (33 U.S.C. § 1311) prohibits the discharge of any pollutants into waters of the United States, except as allowed by permit issued pursuant to various sections of the Clean Water Act.

Reclamation and the Authority have consulted with the Regional Board pursuant to the Clean Water Act. The Regional Board issued a WDR for the Authority's Plan on December 5, 2019.

4.3 Endangered Species Act (16 U.S.C. § 1531 et seq.)

Section 7 of the Endangered Species Act requires Federal agencies, in consultation with the Secretary of the Interior and/or Commerce, to ensure that their actions do not jeopardize the continued existence of endangered or threatened species, or result in the destruction or adverse modification of the critical habitat of these species.

Reclamation consulted with the USFWS and NMFS on the Proposed Action. On December 16, 2019, the USFWS concurred with Reclamation's determination that the Proposed Action may affect, but is not likely to adversely affect the giant garter snake (Appendix C). On December 27, 2019, NMFS concurred with Reclamation's determination that the Proposed Action may affect, but is not likely to adversely affect California Central Valley steelhead, Central Valley spring-run Chinook salmon, and Southern green sturgeon or their Critical Habitat (Appendix D). Reclamation and NMFS will review the status of species for this determination in 2025, at which time NMFS will re-establish whether a not likely to adversely affect concurrence is still valid or if a formal ESA consultation with incidental take coverage would be warranted.

4.4 Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 et seq.)

The Magnuson-Stevens Fishery Conservation and Management is the primary law governing marine fisheries management in United States federal waters. The Act was first enacted in 1976 and amended in 1996.

Reclamation requested consultation with NMFS on the Proposed Action pursuant to the Magnuson-Stevens Fishery Conservation and Management Act. On December 27, 2019, NMFS concluded that the Proposed Action would not adversely impact essential fish habitat and consultation was not required (Appendix D).

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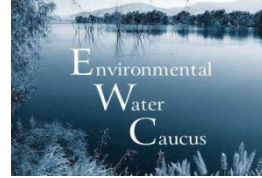
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Appendix A: Comment Letters Received

Comment Letter 1



December 10, 2019

Brenda Burman
Commissioner
U.S. Bureau of Reclamation
1849 C Street NW
Washington DC 20240-0001

Ernest Conant,
Regional Director
California-Great Basin Reg.Fed Bldg.
2800 Cottage Way
Sacramento CA 95825-1898

Re: New Information Regarding Deformities in Sacramento Splittail and Drinking Water Quality Raise Significant National Issues for Consideration in the Draft Environmental Assessment for the proposed 10-Year Agreement to Use the San Luis Drain for Discharges to the San Joaquin River and San Francisco-Bay Delta by the San Luis & Delta-Mendota Water Authority--We Seek a Public Hearing, an EIS and Extended Comment Period--2 Weeks Is Insufficient.

The undersigned organizations respectfully request an extension of the 2 week comment period ending right before Christmas Eve for the Draft Environmental Assessment (DEA) for the new 10-Year Use Agreement for the San Luis & Delta-Mendota Water Authority Long-term Storm Water Management Plan for the Grassland Drainage Area. Pursuant to 40 CFR § 1506.6 we seek a public hearing, an environmental impact statement and a 60 day comment period due to the national and regional significance of the proposed discharge sanctioned by this new use agreement and contract. As you know, the Inspector General Reported in November 2019¹ that the expiring use agreement has not been followed, properly managed and treatment promises were not kept. The IG's Recommendations 2-7 remain unresolved.

With the holidays approaching and the desire for many to spend time with their families and loved ones, it seems particularly onerous to provide only a two week notice period ending the day before Christmas Eve.

¹ <https://www.doioig.gov/reports/bureau-reclamation-did-not-effectively-manage-san-luis-demonstration-treatment-plant>

Our organizations have had a long history of involvement with the Grassland Bypass Project, no official notice of the availability of the DEA was provided, and no press release was issued. The notice of availability for this DEA was posted on Reclamation's website under NEPA documents² on December 9, 2019 for a 2-week comment period ending on December 23, 2019.

The title of the DEA mentions a 10-Year Use Agreement, there is no Use Agreement included in the DEA. Further, there is no draft FONSI provided with the DEA.³ Failure to provide these essential documents for such a truncated public review period effectively precludes public comments and fails to meet Reclamation policy to make diligent efforts to include the public and provide for full the disclosure and transparency contemplated by the National Environmental Policy Act. Given the national and regional interest in the discharge of this selenium contamination gathered from outside the San Luis Unit service area, the time allotted does not comply with the spirit of 40 CFR 1506.6.

The Definition of the Project Remains Muddy with Significant Time Period Discrepancies

The DEA covers a Use Agreement for a period of 10 Years. Yet the San Luis and Delta Mendota Water Authority approved a CEQA document that authorized the use of the San Luis Drain to discharge storm water commingled with subsurface agricultural drainage from the Grassland Drainage Area for 25 Years.⁴ Further, the Central Valley Regional Water Quality Control Board approved Waste Discharge Requirements for only a storm water discharge with a mandatory 2-year permit review in December of 2021. The inconsistency of these various state agency documents, the absence of the new use agreement and the lack of a rigorously defined project in the DEA effectively precludes the public and decision maker from considering a number of "solutions" which will satisfy the project purpose and conditions.

New Information on Environmental Effects of GBP Discharges from the Federal San Luis Drain.

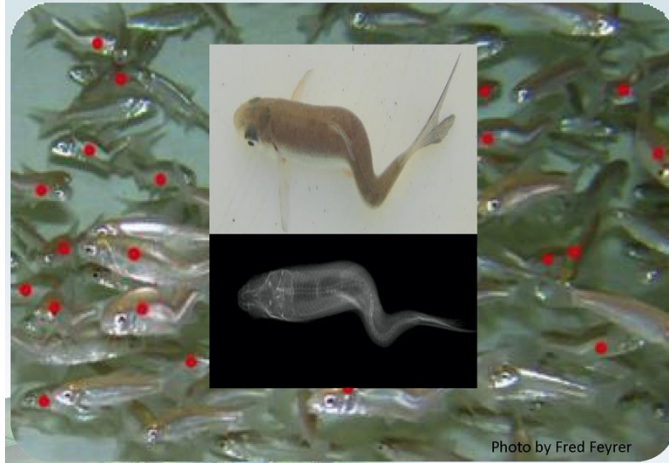
At the December 5, 2019 CV Regional Water Board Meeting, new information was provided by Board staff on selenium effects to Sacramento splittail. Worthy of note is a photo from Dr. Rachel Johnson, provided to the Regional Board and presented at the State of the Estuary Conference in 2019⁵ depicting high numbers of Sacramento splittail (photographed in the Delta with an underwater camera) with spinal deformities (marked by red dots) typical of selenium contamination:

² https://www.usbr.gov/mp/nepa/nepa_project_details.php?Project_ID=41544

³ Federal law and regulation 'require at least thirty (30) calendar days before making the decision on whether, and if so how, to proceed with a proposed action, the Responsible Official must make the EA and preliminary FONSI available for review and comment to the interested federal agencies, state and local governments, federally-recognized Indian tribes and the affected public. The Responsible Official must respond to any substantive comments received and finalize the EA and FONSI before making a decision on the proposed action. See 40 CFR § 6.203 - Public participation.

⁴ <https://ceqanet.opr.ca.gov/2007121110/6>

⁵ See Mavens Notebook summary of Dr. Johnson's presentation at the 2019 State of the Estuary Conference: <https://mavensnotebook.com/2019/12/05/state-of-estuary-standing-too-close-to-the-elephant-addressing-scales-in-restoration-and-fisheries-conservation/>



R. Johnson, 22 Oct 2019 State of the Estuary Conference

Dr. Johnson noted at the conference that, “It’s actually rare to actually see deformed animals in nature because usually something eats them, and so we wanted to take this opportunity to try and diagnose why it is that we had so many of these fish that had these deformities.” Dr. Johnson’s work on splittail has been accepted for publication in *Science of the Total Environment* and is currently undergoing peer-review prior to publication. Further we understand the Sacramento splittail has an 80% deformity rate and Se exposure stable isotope finger-printed back to San Joaquin River. These findings are of national significance and deserve a public hearing before use of the San Luis Drain is sanctioned for continued discharge of selenium, salts and other contaminants into the San Joaquin River and the San Francisco Bay-Delta Estuary.

Although the Sacramento splittail is not currently listed as threatened or endangered by the Federal or State government, they serve as an indicator species for species such as federally listed as threatened Green sturgeon⁶ which feed on the same species of clam (Asian clam) as splittail.

Furthermore, the Contra Costa Water Agency in their December testimony before the Regional Board on the GBP waste discharge permit also voiced concerns over increases in contaminants being discharged by the GBP drainers from this federal facility. Contra Costa WA pumps their drinking water from the south Delta and increases in electrical conductivity has real deleterious effects to their drinking water supply. These discharges were found in violation of State water quality standards.

⁶ <https://www.fisheries.noaa.gov/species/green-sturgeon>

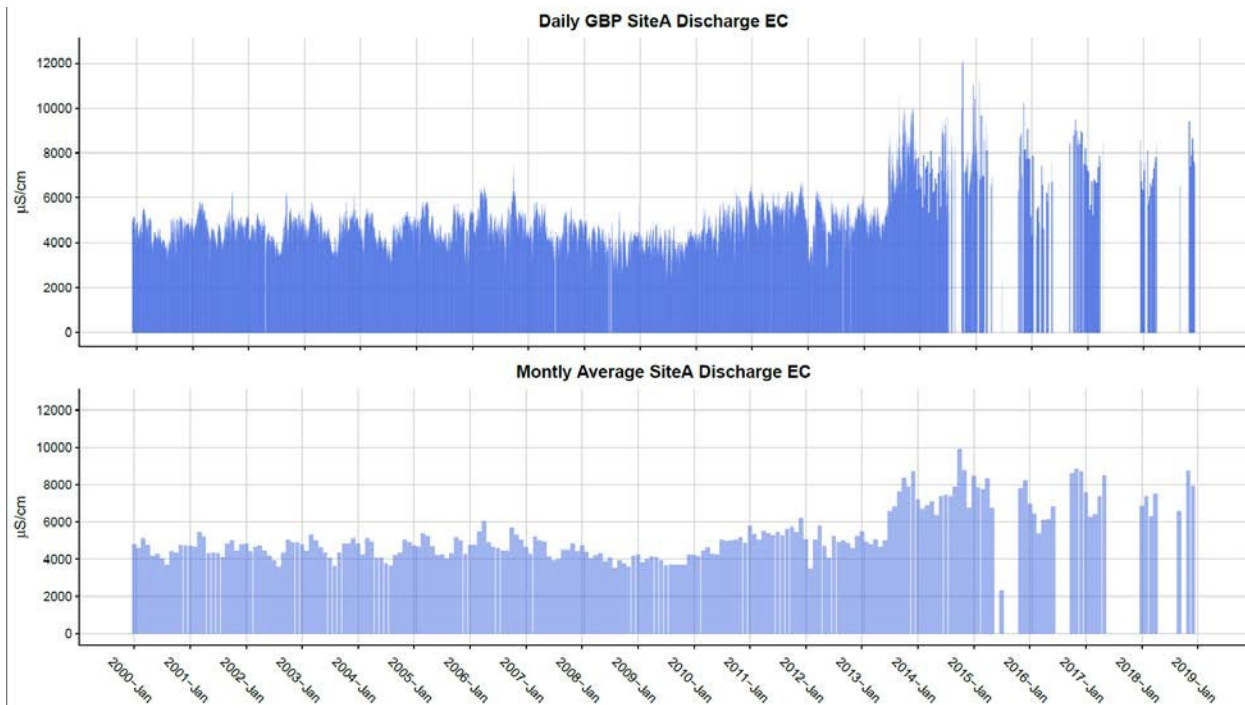


Figure 1 Electrical conductivity (EC) of discharges from Grassland Bypass Project (GBP) (2000 – 2019)

Electrical conductivity (EC) at Station R was as high as 4,000 µS/cm in 2015 and 1,700 µS/cm in 2018, exceeding the 1,600 µS/cm EC objective in the Regional Water Quality Control Board water quality standard in the Basin Plan.

Based on new information, and the need to review the Use Agreement, as well as, the DEA, we request a public hearing, a full EIS and an extension of the comment period for the Draft Environmental Assessment before this new proposal by the San Luis & Delta-Mendota Water Authority to drain lands during storm events for the next decade for discharge into the San Joaquin River and San Francisco-Bay Delta Estuary. We further request copies of the Use Agreement, draft FONSI, and all ESA consultations.

Requiring comment on an issue of such regional and national significance while people are gathering for this religious holiday with family and friends is unconscionable. As well it effectively precludes the public participation and transparency policy goals of the National Environmental Policy Act and Reclamation policies, regulations and directives.

Thank you for your consideration. If you have any questions please contact either Kathryn Phillips Director of Sierra Club California at (916) 557-1100 or Jonas Minton at (916) 626-9148

Jonas Minton
Senior Water Policy Advisor
[Planning and Conservation League](mailto:jminton@pcl.org)
jminton@pcl.org

Noah Oppenheim
Executive Director
[Pacific Coast Federation of Fishermen's Asso.](mailto:noah@ifrfish.org)
noah@ifrfish.org



Kathryn Phillips
Director
Sierra Club California
kathryn.phillips@sierraclub.org



Barbara Barrigan-Parrilla
Director
Restore the Delta
Barbara@restorethedelta.org



Conner Everts
Executive Director
Environmental Water Caucus
Southern California Watershed Alliance
[Environmental Water Caucus](http://EnvironmentalWaterCaucus.org)



Bill Jennings
Chairman Executive Director
California Sportfishing Protection Alliance
deltakeep@me.com

Comment Letter 2



By email to remerson@usbr.gov

December 23, 2019

Rain Emerson, Environmental Compliance Branch Chief
U.S. Bureau of Reclamation
South-Central California Area Office
1243 N. Street
Fresno, CA 93721

RE: DRAFT USE AGREEMENT AND DRAFT ENVIRONMENTAL ASSESSMENT FOR
GRASSLAND BYPASS PROJECT

Dear Ms. Emerson,

This letter is submitted as the comments of the Bay Institute regarding the draft Use Agreement (UA) between the US. Bureau of Reclamation (Reclamation) and the San Luis & Delta Mendota Water Authority (Authority) for use of the San Luis Drain to implement the Grassland Basin Long-Term Storm Water Management Plan (the proposed next phase of of the Grassland Bypass Project, or GBP), and the draft Environmental Assessment (EA) for the GBP.

The GBP represented a significant step forward in addressing management of selenium-laden agricultural subsurface drainage in the San Joaquin basin, bringing agricultural non-point source dischargers into the regulatory system, reducing selenium loading to the San Joaquin River system by at least 80%, and ensuring protection of wetlands channels in the Grassland Area from selenium contamination.

As the Central Valley Regional Water Quality Control Board stated in adopting new Waste Discharge Requirements for the GBP earlier this month, the GBP allowed “temporary degradation of Mud Slough (north) and the San Joaquin River between Mud Slough (north) and the Merced River” in part to provide “time for the development of regional drainage management capability to meet water quality objectives.” In extending the GBP to cover stormwater events, Reclamation must ensure that agricultural subsurface drainage discharges to the river do in fact cease and that future stormwater discharges do not perpetuate selenium loading at levels that adversely impact fish and wildlife beneficial uses.

We urge Reclamation to make the following changes to the draft UA and draft EA:

- The draft UA should be revised to change the proposed 10-year term to a shorter, interim period (e.g., up to 2 years). The draft UA was not made available when the draft EA was circulated for public review, and as a result the public and interested parties did not have all the information necessary to either evaluate the adequacy of the draft EA or to provide feedback regarding the provisions of the draft UA. It should be noted that the environmental and downstream water agency stakeholders who were involved in development of the three previous GBP UAs were not involved in developing this draft, which as a result does not sufficiently address important environmental and downstream issues.
- The draft UA should be revised to provide specific detail regarding what actions will be taken to ensure that no discharge of subsurface agricultural drainage will occur as a result of continued implementation of the GBP. The draft UA appropriately states that subsurface agricultural drainwaters will not be discharged using the GBP, but contains insufficient detail regarding management actions to prevent actual agricultural discharges during stormwater events; a specific and measurable definition of stormwater events that would trigger use of the San Luis Drain for conveyance of stormwater runoff; and monitoring, performance evaluation and enforcement measures to ensure compliance with the prohibition against agricultural drainwater discharges.
- The draft UA should be revised to include a 2 ppb selenium performance target for discharges to Mud Slough and the San Joaquin River. There is ample scientific evidence, from studies both in the San Francisco estuary and Central Valley watershed and nationally, that the current 5 ppb objective in Mud Slough and the San Joaquin River is not sufficiently protective of fish and wildlife beneficial uses, and that the objective should be at or below 2 ppb (for more discussion and literature citations, see attached November 6, 2019, comments of the Bay Institute regarding the tentative Waste Discharge Requirements for Surface Water Discharges from the Grassland Bypass Project in Merced and Fresno Counties, draft Order R5-2015-0094-01, proposed for adoption by the Central Valley Regional Water Quality Control Board). The operation of the GBP in recent years shows that attaining a 2 ppb target is achievable; it is therefore appropriate and desirable for Reclamation and the Grassland Area dischargers to adopt a 2 ppb performance target in order to avoid likely adverse impacts of discharging selenium loads even though they may comply with the current 5 ppb objective.
- The draft EA should be revised to address potential adverse impacts to fish and wildlife beneficial uses in the San Joaquin basin and downstream areas as a result of elevated selenium loading associated with stormwater events. For instance, a recent study (undergoing review) by an inter-agency team of researchers found evidence that deformities in juvenile Sacramento splittail in 2011(a wet year) were caused in part by exposure to selenium from San Joaquin basin sources, suggesting that storm events could in future constitute a significant pathway for selenium transfer to estuarine species.

Thank you for the opportunity to comment on the draft UA and draft EA. Please contact me at 415-272-6616 or bobker@bay.org if you have any questions regarding these comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Gary Bobker". The signature is fluid and cursive, with the first name "Gary" and last name "Bobker" clearly distinguishable.

Gary Bobker
Program Director

TBI 2019 attachment: November 6, 2019, comments of the Bay Institute regarding the tentative Waste Discharge Requirements (WDRs) for Surface Water Discharges from the Grassland Bypass Project (GBP) in Merced and Fresno Counties, draft Order R5-2015-0094-01, proposed for adoption by the Central Valley Regional Water Quality Control Board (Board).



By email

November 6, 2019

Sue McConnell, Supervising Water Resource Control Engineer
Irrigated Lands Regulatory Program
Central Valley Regional Water Quality Control Board
sue.mcconnell@waterboards.ca.gov

RE: TENTATIVE WASTE DISCHARGE REQUIREMENTS FOR THE GRASSLAND
BYPASS PROJECT

Dear Ms. McConnell,

This letter is submitted as the comments of the Bay Institute regarding the tentative Waste Discharge Requirements (WDRs) for Surface Water Discharges from the Grassland Bypass Project (GBP) in Merced and Fresno Counties, draft Order R5-2015-0094-01, proposed for adoption by the Central Valley Regional Water Quality Control Board (Board).

The GBP represented a significant step forward in addressing management of selenium-laden agricultural subsurface drainage in the San Joaquin basin, bringing agricultural non-point source dischargers into the regulatory system, reducing selenium loading to the San Joaquin River system by at least 80%, and ensuring protection of wetlands channels in the Grassland Area from selenium contamination. The Grassland Area drainers are to be commended for their efforts to design and implement the GBP.

However, while the GBP's selenium load reductions were dramatic, the project did not ensure equivalent protection for the San Joaquin River system as was granted the wetland areas. The Board allowed "temporary degradation of Mud Slough (north) and the San Joaquin River between Mud Slough (north) and the Merced River" in part to provide "time for the development of regional drainage management capability to meet water quality objectives" (Attachment A, p. 40). Now that the Grassland Area dischargers have completed efforts to control agricultural subsurface drainage discharges to the river, it is time to ensure that those discharges to the river cease and that stormwater discharges do not perpetuate selenium loading at levels that adversely impact fish and wildlife beneficial uses.

In summary, we find that:

- The 4-day average 5 ppb Se objective and maximum 12-20 ppb Se objectives for Mud Slough and the San Joaquin River are not sufficiently protective of fish and wildlife beneficial uses. The WDRs should be revised to include a 2 ppb performance goal and the Board should concurrently initiate the process to similarly revise the basin plan objective in a timely and expeditious manner.
- From the beginning, the GBP was intended to result in the elimination of agricultural subsurface drainage discharges to the San Joaquin River, and the new WDR has been explicitly premised on the need to control stormwater discharges. The WDRs should be revised to include a prohibition on discharge of agricultural subsurface drainwaters to Mud and Salt Sloughs.
- The WDRs should be revised to include a shorter term with specific triggers for reopeners.
- The WDRs should be revised to include a more specific definition of storm events.

1. The 4-day average 5 ppb Se objective and maximum 12-20 ppb Se objectives for Mud Slough and the San Joaquin River are not sufficiently protective of fish and wildlife beneficial uses. The WDRs should be revised to include a 2 ppb performance goal and the Board should concurrently initiate the process to similarly revise the basin plan objective in a timely and expeditious manner.

The finding that the 5 ppb objective is not sufficiently protective of fish and wildlife beneficial uses is well documented in the scientific literature and not controverted by other evidence (for instance, see Peterson and Nebeker 1992; Lemly and Skorupa 2007; USEPA 2016). The assertion in Attachment A that “(s)elenium is the main concern in the surface water discharge due to reproduction impacts on waterfowl” (p. 1) overlooks the fact that elevated levels of selenium can also cause similar effects in fish and aquatic invertebrates, including species of concern in the San Joaquin River system and downstream in the San Francisco Bay-Delta estuary, including Chinook salmon, steelhead, Delta smelt, green and white sturgeon, and splittail (USFWS 2008). Numerous studies of specific risks to aquatic organisms in the San Francisco Bay-Delta estuary, which can be exposed to selenium bioaccumulation in the food web from San Joaquin-derived sources, especially in wetter years, also indicate that the 5 ppb objective is not protective of species in this ecosystem (Luoma et al 1992; Luoma and Presser 2006; Presser and Luoma 2009; Presser and Luoma 2010; USEPA 2016).

Furthermore, compliance with the maximum 12-20 ppb objectives will not prevent introduction and bioaccumulation of selenium in the San Joaquin River and estuarine ecosystems. Based on the historical record for wetter period selenium loading during the implementation of the GBP, future stormwater events are likely to result in frequent occurrences of selenium loading at or near these maximum values. Even short windows for introducing elevated selenium loads into the environment can result in selenium bioaccumulation in the food web (Beckon 2016). Indeed, a recent study (undergoing review) by an inter-agency team of researchers (summarized in Johnson 2019) found evidence that deformities in juvenile splittail in 2011(a wet year) were caused in part by exposure to selenium from San Joaquin basin sources, suggesting that storm events could in future constitute a significant pathway for selenium transfer to estuarine species.

Based on these concerns, we urge the Board to:

- Revise the WDRs to include a 4-day 2 ppb performance goal for Mud Slough.
- Concurrently, immediately initiate the process of reviewing the adequacy of the 5 ppb Se objective for Mud Slough and the San Joaquin River, with the intent of adopting a more protective objective in the San Joaquin Basin Plan at the earliest possible date.

2. From the beginning, the GBP was intended to result in the elimination of agricultural subsurface drainage discharges to the San Joaquin River, and the new WDR has been explicitly premised on the need to control stormwater discharges. The WDRs should be revised to include a prohibition on discharge of agricultural subsurface drainwaters to Mud and Salt Sloughs.

As the draft WDRs explicitly acknowledge, “(t)he ultimate goal of the Grassland Bypass Project is to eliminate all agricultural subsurface drainage to the San Joaquin River, a zero discharge to the River” (Attachment A, p. 20). The draft order states that “Phase IV of the [GBP] is designed to minimize water quality and other environmental impacts associated with ... storm events” (p. 2) and that “(a)ll discharges from the area to the San Joaquin River are now managed by the Dischargers in a way that has eliminated discharges except for those related to storm events” (p.4).

Nevertheless, Prohibitions 2 and 3 (at p. 13 of the draft Order) would allow for discharge of agricultural subsurface drainage water to both Mud Slough and Salt Slough if the Se objectives are being met or stormwater plan provisions are being implemented. This is contrary both to the stated purpose of the GBP since its inception and to the need to further reduce selenium loads to the San Joaquin River system, as discussed above. We urge the Board to revise the WDRs to include an absolute prohibition on discharge of agricultural subsurface drainwaters to Mud or Salt Sloughs.

3. The WDRs should be revised to include a shorter term with specific triggers for reopeners.

The draft WDRs propose to authorize discharges to Mud Slough using the San Luis Drain through 2045. However, the new Use Agreement between the U.S. Bureau of Reclamation and the Grassland Area drainers for conveyance of stormwaters using the San Luis Drain has yet to be completed and reviewed by the Board and other interested parties. Furthermore, as noted above, there is ample evidence that the 5 ppb Se objective for Mud Slough and the San Joaquin River is not sufficiently protective of fish and wildlife beneficial uses and recent indications that elevated selenium loading associated with stormwater events may result in adverse fish and wildlife impacts. Finally, the Board must prepare to comply with the recent finding of the Ninth Circuit Court of Appeals in *Pacific Coast Federation of Fishermen's Associations v. Glaser* (937 F.3d 1191, 1199) that use of the GBP for stormwater discharges is not exempt from NPDES permit requirements. For these reasons, the WDRs should be revised to include a term no longer than the amount of time expected to complete a review and revision of the San Joaquin Basin

Plan objectives for Se in Mud Sough and the San Joaquin River; to review and if necessary amend the new Use Agreement to address concerns raised by the Board and other parties; to incorporate findings of further analyses of the 2011 splittail deformities and future risks to this and other estuarine species from the occurrence of maximum Se values associated with stormwater events; and to issue a NDPES permit. If instead the term adopted by the Board is longer than this, then the WDRs should be revised to include the items above as specific reopeners.

4. The WDRs should be revised to include a more specific definition of storm events.

The description of storm events that would trigger use of the San Luis Drain in the revised Addendum to the Certified 2009 Final EIR for the Grassland Bypass Project and Modification of the Grassland Bypass Project (Long-Term Storm Water Management Plan 2020-2045) is qualitative:

“Early rain events tend to be absorbed in the soil profile. However, as significant rainfall occurs the soil profile becomes saturated; there is no longer room in the soil for the excess storm water and storm flows are generated. Once this occurs there will be discharge of storm water as well as accretion flows of shallow groundwater into drainage conveyance channels from adjacent fields. There is not a clear connection between the year type, amount or frequency of rainfall and the need to discharge to the San Luis Drain. Once the regional drains have reached their holding capacities and the threat of ponding is imminent, discharge will occur. It should be further noted that the proposed SCADA sump shut-off system would be implemented prior to any release of storm-induced discharge” (McGahan 2019, p. 1).

Previous Use Agreements implementing the GBP contained detailed, quantitative definitions of high rainfall events that would trigger an exemption from the discharge limits specified in the Agreements. Going forward, such quantitative definitions of high rainfall events should be used not to trigger exemptions, but to trigger the discharge of storm runoff from the Grassland Area into the San Luis Drain, which would constitute the only permitted discharge (and would only be permissible in our view if done in conjunction with meeting a 2 ppb performance goal).

Thank you for the opportunity to comment on the draft WDRs for the GBP. We look forward to working with the Board to ensure that fish and wildlife beneficial uses of Mud Slough, the San Joaquin River, and the Bay-Delta estuary are protected in future. These ecosystems are worthy of – and require – the same care as the Grassland wetlands. Please contact me at 415-272-6616 or bobker@bay.org if you have any questions regarding these comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Gary Bobker". The signature is fluid and cursive, with the first name "Gary" and last name "Bobker" clearly distinguishable.

Gary Bobker
Program Director
The Bay Institute

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nium/Species_at_risk_FINAL.pdf)

Comment Letter 3

[EXTERNAL] Supplemental Comments on Draft EA on a 10-Year Use Agreement for the San Luis & Delta-Mendota Water Authority(Draft EA-19-029)

William Jennings <deltakeep@me.com>

Mon 12/23/2019 7:12 PM

To: Emerson, Rain L <remerson@usbr.gov>

Cc: William Jennings <deltakeep@me.com>

 2 attachments (2 MB)

1033-1 Declaration of Alicia Forsythe4-2-18.pdf; ATT00001.htm;

December 23, 2019

Ms. Rain Emerson

U.S. Bureau of Reclamation

South-Central California

Area Office

1243 N. Street

Fresno, CA 93721

Re: Comments on the Draft Environmental Assessment on a 10-Year Use Agreement for the San Luis & Delta-Mendota Water Authority Long-term Storm Water Management Plan for the Grasslands Drainage Area (Draft EA-19- 029)—A Comprehensive EIS is Required.

Ms. Emerson,

Please accept the following supplemental comments to those we submitted along with 19 other environmental, tribe and fishing organizations. We find in addition to failing to comply with NEPA, CWA, ESA, CVPIA and other federal laws and regulations, the proposed action to use the federal San Luis Drain for stormwater discharge combined with agricultural drainage and contaminated groundwater seepage, also fails to comply with the Reclamation Wastewater and Groundwater Study Act of 1992, Pub. L. No. 102-575, §§ 1601-1617, 106 Stat. 4600, 4663, which directed the Secretary of the Interior to:

[U]ndertake a program to investigate and identify opportunities for reclamation and reuse of municipal, industrial, domestic, and agricultural wastewater, and naturally impaired ground and surface waters, for the design and construction of demonstration and permanent facilities to reclaim and reuse wastewater, and to conduct research, including de-salting, for the reclamation of wastewater and naturally impaired ground and surface waters. With respect to the San Luis Unit, however, the 1992 Act limited the Secretary of Interior to investigating projects that were recommended in the 1990 Rainbow Report, stating:

The Secretary shall not investigate, promote or implement, pursuant to this title, any project intended to reclaim and reuse agricultural wastewater generated in the service area of the San Luis Unit of the Central Valley Project, California, except those measures recommended for action by the San Joaquin Valley Drainage Program in the report entitled A Management Plan for Agricultural Subsurface Drainage and Related Problems on the Westside San Joaquin Valley (September 1990) [the Rainbow Report].

Use of the San Luis Drain for discharge of stormwater and untreated drain water was not recommended in Rainbow Report.

Further the DEA and proposed federal action also conflicts with the attached 2018 federal declaration before the court which clearly documents Reclamation's involvement in various parts of the GBP arbitrarily

excluded from environmental evaluation including the SJRIP and other aspects. And directly contradicts Reclamation's assertion to the court that: *"The Third Use Agreement is set to expire on December 31, 2019 at which time agricultural drainage and stormwater will no longer be permitted to discharge into the San Luis Drain."*

1 JEFFREY H. WOOD
2 Acting Assistant Attorney General
3 Environment and Natural Resources Division
4 United States Department of Justice

5 STEPHEN M. MACFARLANE (N.Y. 2456440, D.C. 439139)
6 Senior Attorney
7 Environment and Natural Resources Division
8 United States Department of Justice
9 501 "I" Street, Suite 9-700
10 Sacramento, CA 95814
11 Telephone: (916) 930-2204
12 Fax: (916) 930-2210
13 Email: Stephen.Macfarlane@usdoj.gov

14 Attorneys for Federal Defendants

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IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF CALIFORNIA

13 FIREBAUGH CANAL WATER DISTRICT and) 1:88-cv-00634-LJO/SKO
14 CENTRAL CALIFORNIA IRRIGATION DISTRICT,) 1:91-cv-00048-LJO/SKO
15) (Partially Consolidated)
16 Plaintiffs,)
17 v.)
18) **DECLARATION OF**
19 UNITED STATES OF AMERICA, *et al.*,) **ALICIA FORSYTHE IN**
20) **SUPPORT OF**
21 Defendants, and) **FEDERAL DEFENDANTS'**
22) **STATUS REPORT OF**
23 WESTLANDS WATER DISTRICT, *et al.*,) **APRIL 1, 2018**
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25 Defendants-in-Intervention.)
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I, Alicia Forsythe, declare as follows:

1. I am the Deputy Regional Director of the Bureau of Reclamation's ("Reclamation") Mid-Pacific Region, based in Sacramento, California. In my official

1 of California, most of western Nevada, and part of southern Oregon. I was appointed Deputy
 2 Regional Director in February 2018 and provide direct oversight of the Klamath and Lahontan
 3 Basin Area Offices, as well as supervising technical offices and programs within the region,
 4 including the Construction Office, Program Coordination Office, and the Divisions of
 5 Environmental Affairs; Safety, Health & Security; Design and Construction; Resources
 6 Management; and Planning. Prior to becoming Deputy Regional Director, I served as the
 7 Program Manager for the San Joaquin River Restoration Program. I began my Reclamation
 8 career in the Mid-Pacific Region in 2009. I have been the Mid-Pacific Region's lead negotiator
 9 and project manager for San Luis drainage discussions since January 2016. I am familiar with
 10 the actions undertaken by Reclamation to provide drainage service to the San Luis Unit of the
 11 Central Valley Project. I make this declaration based upon my personal knowledge, and could
 12 and would so testify competently if called to do so.

13 2. In Federico Barajas' prior declaration accompanying the United States' Status
 14 Report of October 1, 2017 (ECF 1026-1), Mr. Barajas advised the Court of Reclamation's
 15 actions associated with implementation of drainage service in the San Luis Unit, including the
 16 implementation of the 2011 Revised Control Schedule. On January 19, 2018, Mr. Barajas
 17 provided a further supplemental declaration advising the Court of Reclamation's plans to
 18 reinstitute drainage activities under an updated 2018 Revised Control Schedule within Westlands
 19 Water District ("Westlands"). ECF 1027-1. I now provide this declaration to further update the
 20 Court on Reclamation's activities in the San Luis Unit since October 1, 2017.

21 **I. IMPLEMENTATION OF THE CONTROL SCHEDULE AND THE**
 22 **WESTLANDS SETTLEMENT**

23 A. The Westlands Settlement

24 3. On January 10, 2017, the United States and Westlands executed an Addendum to
 25 the 2015 Westlands Settlement to extend by one year, from January 15, 2017 to January 15,
 26 2018, the date by which the Westlands Settlement would become voidable if authorizing
 27 legislation were not enacted into law. ECF 1013-2. The United States and Westlands have not

1 sought another extension to the Westlands Settlement to extend the date by which the Settlement
2 becomes voidable past January 15, 2018.

3 4. On March 28, 2017, Congressman David Valadao introduced H.R. 1769, a bill
4 “[t]o affirm an agreement between the United States and Westlands Water District dated
5 September 15, 2015, and for other purposes.” On April 27, 2017, H.R. 1769, as amended, was
6 reported favorably out of committee by the House Natural Resources Committee. No additional
7 action has occurred on this bill since the Federal Defendants’ Supplemental Status Report of
8 January 19, 2018 (ECF 1027).

9 B. Agreement with San Luis Unit Water District

10 5. On April 25, 2017, Reclamation signed the “Agreement between the United
11 States and the San Luis Water District” (“San Luis WD Drainage Agreement”). Under the terms
12 of the San Luis WD Drainage Agreement, San Luis Water District (“San Luis WD”) would agree
13 to support amendments to the San Luis Act of 1960, set forth in the San Luis WD Drainage
14 Agreement, that if enacted would relieve the United States of its obligations under the statute to
15 provide drainage service to San Luis WD, and would further agree to assume legal responsibility
16 for the management of drainage within its boundaries, in exchange for certain consideration
17 requiring approval by Congress.

18 6. On September 5, 2017, Reclamation awarded a \$3 million dollar financial
19 assistance agreement to San Luis WD in furtherance of implementation of the San Luis WD
20 Drainage Agreement. The agreement includes funds to (1) complete a Drainage Implementation
21 Master Plan that would serve as a road map for San Luis WD to achieve the overall goal of
22 nearly eliminating drainage water discharge from San Luis WD and (2) prepare California
23 Environmental Quality Act compliance for adoption by the district and National Environmental
24 Policy Act compliance for Reclamation’s review and finalization of the proposed Drainage
25 Implementation Master Plan. The agreement also includes funds to complete the final plans and
26 specifications for the Kaljian Drainwater Reuse Project’s Charleston Drainage District Ditch
27 Improvements, which would provide the San Luis WD with the ability to capture and reuse

28 Declaration of Alicia Forsythe
in Support of Federal Defendants’
Status Report of April 1, 2018
1:88-cv-00634-LJO-SKO

1 drainwater from the Charleston Drainage District area. The agreement includes the construction
2 of a portion of the project that includes three pump stations and pipelines and re-grading
3 approximately 2 miles of the drainage ditch. The efforts under the financial assistance
4 agreement with San Luis WD are ongoing and expected to be completed by September 30, 2021.
5 Contracts for the completion of the Drainage Implementation Master Plan and associated
6 California Environmental Quality Act compliance are currently being developed by San Luis
7 WD personnel.

8 C. Continued Implementation of the 2018 Revised Control Schedule

9 7. On January 15, 2018, the one year extension of the partial stay of the partial
10 judgement and injunctive orders requiring Reclamation to implement drainage service within
11 Westlands expired. In preparation for the expiration of the partial stay, Reclamation reviewed
12 and revised previous control schedules to update and plan for reinitiating drainage activities
13 within Westlands. On January 19, 2018, Reclamation submitted the 2018 Revised Control
14 Schedule describing major activities, schedule, and estimated annual funding requirements for
15 the implementation of Phase 1 of drainage service for the Westlands central sub-unit.
16 Reclamation also reported on plans to develop a detailed control schedule for the entirety of the
17 drainage obligation addressing Westlands and the districts situated in the San Luis Unit north
18 of Westlands: San Luis WD, Panoche Water District, and Pacheco Water District
19 (collectively, the "Northerly Area Districts"). (ECF 1027-1)

20 8. Since submission of the 2018 Revised Control Schedule, Reclamation has
21 proceeded with the following project activities:

22 a. Re-scope Project Needs: Substantial time has elapsed since Reclamation
23 identified the acreage and location of drainage-impaired lands following the methodology in the
24 2007 Record of Decision for the San Luis Drainage Feature Reevaluation and the 2008
25 Feasibility Study. It is recognized that current conditions have the potential to alter the
26 conceptual plans for construction of drainage systems and facilities presented in the 2008
27 Feasibility Study, specifically with regard to the acreage and location of drainage impaired lands.

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1 Reclamation, in collaboration with Westlands and the Northerly Area Districts, is collecting data
2 to verify and validate the original assumptions in the 2008 Feasibility Study and identify
3 potential changes to the implementation plans based on changes in the acreage and location of
4 drainage-impaired lands.

5 b. Westlands Water District Repayment Contract: Under Reclamation law,
6 construction, operation, and maintenance of agreed upon drainage service features requires
7 repayment by Westlands. Reclamation is currently updating a previous draft of the repayment
8 contract to be shared with Westlands for evaluation and input.

9 c. Comprehensive Control Schedule: The development of the comprehensive
10 control schedule will address in detail the expected project activities associated with the
11 implementation of drainage obligations for both Westlands and the Northerly Area Districts.
12 Implementation activities include associated environmental compliance, land acquisitions,
13 design, procurement and construction for collection facilities, treatment plants, evaporation
14 ponds and associated mitigation requirements. The schedule is being developed utilizing a
15 template created for Westlands Central Sub-area, Phase 1, and initial designs provided in the
16 2007 Record of Decision for the San Luis Drainage Feature Re-evaluation and 2008 Feasibility
17 Study. It is anticipated the project activities will be further refined as actual implementation
18 within each sub-area proceeds. Reclamation also intends to include estimated project activity
19 costs as a component of the comprehensive control schedule to assist with current and future
20 budgetary planning.

21 9. Panoche Drainage District ("DD") is continuing to operate the Demonstration
22 Treatment Plant ("Demo-Plant") to meet salt and selenium removal performance requirements
23 (98% salt removal and selenium removal to below 10 parts per billion) using funding provided
24 under the Cooperative Agreement described in the supplemental Declaration from David Murillo
25 in the Status Report of October 1, 2016. ECF 1012-2. There are three licensed treatment plant
26 operators employed by Panoche DD who work at the Demo-Plant, working under the supervision
27 of a Demo-Plant manager contracted by Panoche DD. Reclamation's technical staff provide

28 Declaration of Alicia Forsythe
in Support of Federal Defendants'
Status Report of April 1, 2018
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1 assistance and oversight of the Demo-Plant operators and the Demo-Plant manager, through
2 weekly teleconferences and frequent site visits, regarding operations, maintenance, testing, and
3 optimization. Recent and on-going actions at the Demo-Plant include:

4 a. Upgrades to feedwater pumps and replacement of process piping to
5 increase flow capacity and reduce maintenance: Upgrades to the bowls/impellers of the
6 feedwater pumps were completed to increase the feedwater flow rate to 250 gallons per minute.
7 The plumbing changes have increased plant flow capacity by about 15 percent.

8 b. Replacement of the nutrient system to improve performance and stability
9 of the biotreatment process: A new nutrient blend was developed, synthesized, and incorporated
10 into the selenium biotreatment system resulting in a substantial increase in process control and
11 stability and a significant reduction in maintenance requirements. The nutrient injection pumps
12 were evaluated and deemed suitable for use with the new nutrient system.

13 c. Operation of new biotreatment pilot system: A pilot system to test a new
14 biotreatment technology was operated for six months on both raw tile sump water and reverse
15 osmosis concentrate without scale occurrence. The alternative biotreatment process significantly
16 reduces the size and cost of biotreatment equipment as compared to the currently installed
17 biotreatment process. Pilot results are being analyzed, a report is being generated, and a proposal
18 for demonstration scale installation and full scale plant buildout are also expected deliverables in
19 the next three months.

20 d. Expansion of the ultrafiltration system to replace the media filter: Once
21 selenium is removed from drainwater through the biotreatment process described above, the
22 drainwater then undergoes reverse osmosis pretreatment filtration to remove particulates in the
23 feed water. The original treatment design of the Demo-Plant utilized two different reverse
24 osmosis pretreatment filtration processes for testing-- membrane ultrafiltration and media
25 filtration-- to be operated and compared for determination of the most successful system. After
26 operation of these two systems, Reclamation determined that membrane ultrafiltration is the
27 required system for pretreatment of drainwater prior to reverse osmosis treatment and that media

28 Declaration of Alicia Forsythe
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1 filtration is not a suitable pretreatment. Reclamation is expanding the use of membrane
2 filtration, through the use of ultrafiltration technology, to replace the media filter previously
3 used. This replacement will improve the efficiency of the reverse osmosis treatment and increase
4 the volume of treated water at the Demo Plant. The expansion ultrafiltration process equipment
5 has been procured and is currently on-site awaiting installation. Construction documents to
6 expand the ultrafiltration system are complete and pending final review from Panoche DD
7 (submitted to Panoche DD on December 1, 2017). Construction documents will be put out for
8 bid once the final review is complete.

9 e. Optimization of product water recovery from the ultrafiltration and reverse
10 osmosis systems: Drainwater that has undergone reverse osmosis treatment where greater than
11 98% rejection of salt is obtained in the permeate is known as "product water," and can be reused
12 for irrigation. As noted above, ultrafiltration is a membrane process that is used to pretreat the
13 drainwater fed prior to the reverse osmosis process through the removal of particles.
14 Ultrafiltration recovery of product water has increased from 89% to 95%, and is stably operating
15 at 95% recovery. Additional testing for ultrafiltration recovery up to 97% is expected in the next
16 six months. Increasing the reverse osmosis recovery is currently being tested, where reverse
17 osmosis recovery has been increased from 50 to 55%. A pilot reverse osmosis unit for recovery
18 testing is to arrive at the Demo-Plant site in the next three months, where recoveries of up to
19 75% of effluent from the membrane ultrafiltration pretreatment process can be tested using a
20 variety of anti-scalant chemicals and pH ranges on smaller elements without concerns of scale
21 occurrence due to associated costs of replacing smaller membrane elements. Reclamation will
22 work to continue increasing reverse osmosis recovery at the Demo-Plant as long as scale is not
23 detected and up to process limitations (design pressure and flow). The pilot reverse osmosis will
24 operate in parallel to the Demo-Plant reverse osmosis at an increased recovery to test limits of
25 recovery.

26 f. Waste handling of selenium and non-selenium containing solids: Process
27 flow balance coupled with laboratory results and calculations have been used to determine all

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liquid and solid waste products associated with the Demo-Plant. Process piping to segregate waste streams containing selenium and those that do not contain selenium have been identified, and potential plumbing changes will be considered in the future. Waste generation separation and optimization is expected to continue until December 2018.

II. SUPPORT FOR ADDITIONAL DRAINAGE PROJECTS

10. In addition to reinitiating work under the 2018 Revised Control Schedule, Reclamation has taken a series of drainage-related actions in continued support of the following projects:

a. Grassland Bypass Project: Reclamation and the San Luis & Delta-Mendota Water Authority ("Authority") continue to implement the 2009 Agreement for the Continued Use of the San Luis Drain ("Third Use Agreement") that allows the Authority to operate the Grassland Bypass Project ("GBP") through December 31, 2019. The GBP is further regulated under Waste Discharge Requirements ("WDR") issued by the California Regional Water Quality Control Board. The primary goal of the GBP is to protect the Grasslands wetlands water supply channels from contamination from agricultural drainwater and storm runoff originating in the Grasslands Drainage Area. Reclamation continues to conduct the GBP environmental monitoring program to measure selenium and salts in the San Luis Drain, Mud Slough (north), Salt Slough, and the lower San Joaquin River to confirm that monthly load values specified in the Third Use Agreement and WDR continue to be met. The Third Use Agreement is set to expire on December 31, 2019 at which time agricultural drainage and storm water will no longer be permitted to discharge into the San Luis Drain. Reclamation and the Grasslands Area Farmers are working on a Fourth Use Agreement allowing for the continued use of the San Luis Drain for storm water runoff.

b. Continued Implementation of Activities Identified in the Westside Regional Drainage Plan: The following activities have been implemented in support of the Westside Regional Drainage Plan:

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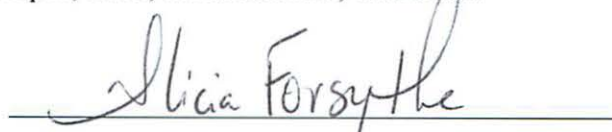
1 i. Panoche DD continues to implement activities associated with the
2 Westside Regional Drainage Plan, notably the re-use of agricultural drainwater from the
3 Grasslands Drainage Area to irrigate salt-tolerant crops such as pistachios and salt tolerant forage
4 grasses in the San Joaquin River Improvement Project ("SJRIIP").

5 ii. On January 31, 2017, the California State Controller issued a
6 report titled "Panoche Water District, Review Report, Administrative and Internal Accounting
7 Controls, March 1, 2013, through February 28, 2015," which found several instances of possible
8 violations of California Government Code Section 8314 and Penal Code Section 424 as well as
9 weaknesses in the Panoche Water District's accounting and administrative controls systems. As
10 a result of this Review Report, further investigations have been initiated by the Office of the
11 Inspector General. On March 30, 2017, Reclamation suspended the grant agreements with
12 Panoche DD for the SJRIIP. The suspension remains in effect pending conclusion of the Office
13 of the Inspector General's investigation. The suspension may affect further development of the
14 SJRIIP infrastructure, but should not affect current operations of the SJRIIP as Reclamation's
15 grant agreements do not fund operations of the SJRIIP. The cooperative agreement for the Demo-
16 Plant continues and has not been suspended.

17 iii. On February 20, 2018, the Attorney General of the State of
18 California filed a criminal complaint against four former employees and one current employee of
19 Panoche Water District. The complaint charges violations of California law based on alleged
20 unlawful disposal and transportation of hazardous waste, embezzlement, and conspiracy to
21 misappropriate more than \$100,000 in public funds. Panoche Water District provides
22 administrative, operation, and maintenance services to Panoche DD.

23 I declare under penalty of perjury that the foregoing is true and correct.

24 Signed this 2nd day of April, 2018, in Sacramento, California.

25 
26 _____

27 Alicia Forsythe

28 Declaration of Alicia Forsythe
in Support of Federal Defendants'
Status Report of April 1, 2018
1:88-cv-00634-LJO-SKO

Comment Letter 4

Stephan C. Volker
Alexis E. Krieg
Stephanie L. Clarke
Jamey M.B. Volker (Of Counsel)

Law Offices of
Stephan C. Volker
1633 University Avenue
Berkeley, California 94703
Tel: (510) 496-0600 ♦ Fax: (510) 845-1255
svolker@volkerlaw.com

10.650.01

December 23, 2019

via email
remerson@usbr.gov
Rain Emerson
U.S. Bureau of Reclamation
South-Central California Area Office
1243 N Street
Fresno, CA 93721

Re: Draft Environmental Assessment for 10-Year Use Agreement for the San Luis & Delta-Mendota Water Authority Long-term Storm Water Management Plan for the Grasslands Drainage Area (Draft EA-19-029)

Dear Ms. Emerson:

We submit the following comments on the Draft Environmental Assessment ("Draft EA") and 10-Year Use Agreement for the San Luis & Delta-Mendota Water Authority's ("SLDMWA's") Long-term Storm Water Management Plan for the Grasslands Drainage Area ("Project") on behalf of the Winnemem Wintu Tribe, North Coast Rivers Alliance, Pacific Coast Federation of Fishermen's Associations, Institute for Fisheries Resources, California Sportfishing Protection Alliance, and San Francisco Crab Boat Owners Association, Inc.

Since 1995, the Grassland Bypass Project ("GBP") has conveyed water contaminated with pollutants, including selenium, through the San Luis Drain ("Drain") to Mud Slough, a water of the United States. After the original five-year term, use of the GBP was extended through 2009, and again through 2019. And now, despite being made fully aware of the detrimental consequences of the GBP's discharge of pollutants, the Bureau of Reclamation ("Bureau") proposes to extend the term of the Drain Use Agreement once again. But any extension must be denied because the negative impacts to the environment from the GBP's unlawful discharge of pollutants to Mud Slough and the San Joaquin River are unacceptable.

It is clear that the Project poses significant environmental impacts that must be addressed in a Supplemental Environmental Impact Statement ("SEIS"). An SEIS is required wherever "[t]he agency makes substantial changes in the proposed action that are relevant to environmental concerns; or [t]here are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts." 40 C.F.R. § 1502.9(c). And where, as is the case here, an Environmental Impact Statement ("EIS") is "more than 5 years old," it

should be “carefully re-examined” to determine if a supplement is required. 46 Fed.Reg. 18026 (Mar. 23, 1981), as amended 51 Fed.Reg. 15618 (Apr. 25, 1986), Question 32. “[I]f there remains ‘major Federal action’ to occur, and if the new information is sufficient to show that the remaining action will ‘affect the quality of the human environment’ in a significant manner or to a significant extent not already considered, a Supplemental EIS *must* be prepared.” *Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 374 (1989), quoting from 42 U.S.C. § 4332(2)(C) (emphasis added).

Such is the case here. The GBP has significant adverse impacts due to its discharge of substantial quantities of selenium and other pollutants whose cumulative effects are severe and growing – and unstudied. SLDMWA’s October 2019 approvals made substantial changes to the GBP that were *not* previously considered in the 2009 Environmental Impact Statement/Environmental Impact Report (“2009 FEIS/FEIR”) and that substantially *increase* the impacts evaluated in the 2009 FEIS/FEIR. Neither SLDMWA’s Addendum to the 2009 FEIS/FEIR nor the Draft EA adequately addresses the impacts of these changes.

The Project will increase the likelihood of contaminated discharges from the Drain into Mud Slough and the San Joaquin River. The Bureau must comply with the Clean Water Act, 33 U.S.C. section 1251, et seq. (“CWA”), and obtain a National Pollutant Discharge Elimination System (“NPDES”) permit for the Drain’s discharge of pollutants to waters of the United States. See *Pacific Coast Federation of Fishermen’s Associations v. Glaser*, 937 F.3d 1191 (9th Cir. 2019) (as modified on denial of rehearing Dec. 20, 2019). The Project will also increase the risk for potential ponding of seleniferous water, which is hazardous to wildlife. In addition, by relying upon stale data in the 2009 FEIR/FEIS, the Bureau and SLDMWA have failed to take a hard look at the capacity of the GBP to process contaminated water in the Project’s reuse area.

The Project’s severe adverse effects on water quality and fish and wildlife are addressed in detail in the attached documents:

- (1) September 13, 2019 Comments of Pacific Coast Federation of Fishermen’s Associations, California Sportfishing Protection Alliance, Friends of the River, San Francisco Crab Boat Owners Association, Inc., Institute for Fisheries Resources, and Felix Smith on the Addendum to the Final Environmental Impact Statement / Environmental Impact Report for the Grassland Bypass Project, 2010-2019, SCH No. 2007121110
- (2) November 5, 2019 Comments of North Coast Rivers Alliance, Pacific Coast Federation of Fishermen’s Associations, Institute for Fisheries Resources, San Francisco Crab Boat Owners Association, California Sportfishing Protection Alliance, and Felix Smith, on Tentative Waste Discharge Requirements for Surface Water Discharges from the Grassland Bypass Project Operated by the San Luis and Delta-Mendota Water Authority and United States Bureau of Reclamation
- (3) November 12, 2019 Verified Petition for Writ of Mandate and Complaint for Declaratory

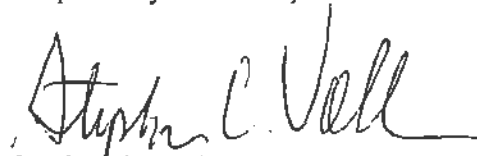
and Injunctive Relief and Attorneys' Fees filed in *North Coast Rivers Alliance, et al., v. San Luis and Delta-Mendota Water Authority*, Merced County Superior Court Case No. 19CV-04989

- (4) December 20, 2019 Comments of the Winnemem Wintu Tribe, North Coast Rivers Alliance, Pacific Coast Federation of Fishermen's Associations, Institute for Fisheries Resources, California Sportfishing Protection Alliance, and San Francisco Crab Boat Owners Association, Inc., re: Transfer of the Operation, Maintenance and Replacement and Certain Financial and Administrative Activities Related to the San Luis and Delta-Mendota Canals, C.W. "Bill" Jones Pumping Plant, Delta-Mendota Canal/ California Aqueduct Intertie Pumping Plant, O'Neill Pumping/Generating Plant, San Luis Drain and Associated Works, and Exhibit 1 thereto (*Pacific Coast Federation of Fishermen's Associations v. Glaser*, 937 F.3d 1191 (9th Cir. 2019) (as modified on denial of rehearing Dec. 20, 2019)).

As is clear from the attached, the impacts of the Project must be studied in an SEIS. In addition, the Bureau and SLDMWA must both apply for an NPDES permit before either can use the Drain.

Please include these comments in the public record for this matter.

Respectfully submitted,



Stephan C. Volker

Attorney for Winnemem Wintu Tribe, North Coast Rivers Alliance, Pacific Coast Federation of Fishermen's Associations, Institute for Fisheries Resources, California Sportfishing Protection Alliance, and San Francisco Crab Boat Owners Association, Inc.

Exhibits

- Exhibit 1: September 13, 2019 Comments of Pacific Coast Federation of Fishermen's Associations, California Sportfishing Protection Alliance, Friends of the River, San Francisco Crab Boat Owners Association, Inc., Institute for Fisheries Resources, and Felix Smith on the Addendum to the Final Environmental Impact Statement / Environmental Impact Report for the Grassland Bypass Project, 2010-2019, SCH No. 2007121110 (Exhibit 1 omitted).
- Exhibit 2: November 5, 2019 Comments of North Coast Rivers Alliance, Pacific Coast Federation of Fishermen's Associations, Institute for Fisheries Resources, San Francisco Crab Boat Owners Association, California Sportfishing Protection Alliance, and Felix Smith, on Tentative Waste Discharge Requirements for Surface Water Discharges from the Grassland Bypass Project Operated by the San Luis and Delta-Mendota Water Authority and United States Bureau of Reclamation (Exhibit 1 omitted).
- Exhibit 3: November 12, 2019 Verified Petition for Writ of Mandate and Complaint for Declaratory and Injunctive Relief and Attorneys' Fees filed in *North Coast Rivers Alliance, et al., v. San Luis and Delta-Mendota Water Authority*, Merced County Superior Court Case No. 19CV-04989.
- Exhibit 4: December 20, 2019 Comments of the Winnemem Wintu Tribe, North Coast Rivers Alliance, Pacific Coast Federation of Fishermen's Associations, Institute for Fisheries Resources, California Sportfishing Protection Alliance, and San Francisco Crab Boat Owners Association, Inc., re: Transfer of the Operation, Maintenance and Replacement and Certain Financial and Administrative Activities Related to the San Luis and Delta-Mendota Canals, C.W. "Bill" Jones Pumping Plant, Delta-Mendota Canal/ California Aqueduct Intertie Pumping Plant, O'Neill Pumping/Generating Plant, San Luis Drain and Associated Works, and Exhibit 1 thereto (*Pacific Coast Federation of Fishermen's Associations v. Glaser*, 937 F.3d 1191 (9th Cir. 2019) (as modified on denial of rehearing Dec. 20, 2019)).

EXHIBIT

1

Stephan C. Volker
Alexis E. Krieg
Stephanie L. Clarke
Jamey M.B. Volker (Of Counsel)

Law Offices of
Stephan C. Volker
1633 University Avenue
Berkeley, California 94703
Tel: (510) 496-0600 ♦ Fax: (510) 845-1255
svolker@volkerlaw.com

10.497.01

September 13, 2019

via U.S. Mail and email

Joseph C. McGahan, Drainage Coordinator
San Luis & Delta-Mendota Water Authority
P.O. Box 2157
Los Banos, CA 93635
jmcgahan@summerseng.com

**Re: Comments of Pacific Coast Federation of Fishermen's Associations,
California Sportfishing Protection Alliance, Friends of the River, San
Francisco Crab Boat Owners Association, Inc., Institute for Fisheries
Resources, and Felix Smith on the Addendum to the Final Environmental
Impact Statement / Environmental Impact Report for the Grassland Bypass
Project, 2010-2019, SCH No. 2007121110**

Dear Mr. McGahan:

We submit the following comments on the San Luis & Delta Mendota Water Authority's ("SLDMWA's") Addendum to the Final Environmental Impact Statement / Environmental Impact Report for the Grassland Bypass Project ("Addendum") on behalf of Pacific Coast Federation of Fishermen's Associations, California Sportfishing Protection Alliance, Friends of the River, San Francisco Crab Boat Owners Association, Inc., Institute for Fisheries Resources, and Felix Smith (collectively, "PCFFA").

Since 1995, the Grassland Bypass Project ("GBP") has conveyed water contaminated with pollutants, including selenium, through the San Luis Drain ("Drain") to Mud Slough, a water of the United States. After the original five-year term, use of the GBP was extended through 2009, and again through 2019. And now, despite being made fully aware of the detrimental consequences of the GBP's discharge of pollutants, SLDMWA proposes to extend the term of the Drain Use Agreement once again. But any extension must be denied because the negative impacts to the environment from the GBP's unlawful discharge of pollutants to Mud Slough and the San Joaquin River are unacceptable.

As you are aware, the Drain's discharge of pollutants into Mud Slough, a water of the United States, without a National Pollutant Discharge Elimination System ("NPDES") permit

violates the Clean Water Act, 33 U.S.C. section 1251, et seq. ("CWA"). Any extension of the GBP Use Agreement would be in furtherance of that CWA violation. Therefore SLDMWA is barred by law from seeking an extension of the Use Agreement. Instead, it must apply for the NPDES permit that is required for the Drain's discharge of pollutants.

Additionally, SLDMWA and its co-operator the U.S. Bureau of Reclamation must complete a Subsequent Environmental Impact Report ("SEIR") and Supplemental Environmental Impact Statement ("SEIS") to comply with the California Environmental Quality Act, Public Resources Code section 21000 et seq. ("CEQA") and the National Environmental Policy Act, 42 U.S.C. section 4321 et seq. ("NEPA").¹ Under CEQA Guidelines section 15162, a subsequent EIR must be prepared when:

- "(1) Substantial changes are proposed in the project which will require major revisions of the previous EIR . . . due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
- (2) Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR . . . due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or
- (3) New information of substantial importance, . . . shows any of the following:
 - The project will have one or more significant effects not discussed in the previous EIR or negative declaration;
 - Significant effects previously examined will be substantially more severe than shown in the previous EIR;
 - Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or
 - Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative."

14 C.C.R. ("CEQA Guidelines") § 15162(a).

¹ United States Fish and Wildlife Service must also comply with NEPA in evaluating whether to approve the modifications contemplated by the Addendum. Initial Study I-1.

Similarly under NEPA, an SEIS is required wherever “[t]he agency makes substantial changes in the proposed action that are relevant to environmental concerns; or [t]here are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.” 40 C.F.R. § 1502.9(c). And where, as is the case here, an EIS is “more than 5 years old,” it should be “carefully re-examined” to determine if a supplement is required. 46 Fed.Reg. 18026 (Mar. 23, 1981), as amended 51 Fed.Reg. 15618 (Apr. 25, 1986), Question 32. “[I]f there remains ‘major Federal actio[n]’ to occur, and if the new information is sufficient to show that the remaining action will ‘affect the quality of the human environment’ in a significant manner or to a significant extent not already considered, a Supplemental EIS *must* be prepared.” *Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 374 (1989), quoting from 42 U.S.C. § 4332(2)(C) (emphasis added).

Both the test under CEQA for an SEIR, and the test under NEPA for an SEIS, are easily met here. The GBP has significant adverse impacts due to its discharge of substantial quantities of selenium and other pollutants whose cumulative effects are severe and growing – and unstudied. Contrary to the Addendum’s claim that “the prior CEQA analyses retain their relevance,” the evidence in the Addendum shows otherwise. The project proposed in the Addendum makes substantial changes to the GBP that were *not* previously considered and that substantially *increase* the impacts evaluated in the 2009 FEIS/FEIR. Therefore, SLDMWA’s reliance on an addendum – rather than a Subsequent EIR and a Supplemental EIS – fails to provide decisionmakers and the public with the information needed to make an accurate and informed decision, in violation of CEQA and NEPA.

I. SLDMWA MUST NOT GRANT A USE AGREEMENT EXTENSION WITHOUT FIRST OBTAINING AN NPDES PERMIT

By allowing an extension of the GBP Use Agreement, SLDMWA is authorizing the continued discharge of pollutants, including selenium, from the Drain into Mud Slough, a water of the United States. SLDMWA has admitted that the Drain, a point source under the CWA, discharges pollutants into waters of the United States. That discharge requires an NPDES permit under the CWA. SLDMWA cannot lawfully authorize the continuance of this ongoing violation of the CWA. Therefore the extension should be denied in its entirety. SLDMWA’s attempted end-run around this legal mandate – by claiming that the Drain is exempt from the CWA NPDES permit requirement – was forcefully rejected by the Ninth Circuit in its recent ruling, *PCFFA v. Glaser*, ___ F.3d ___, 2019 WL 4230097 (Sept. 6, 2019), Slip Op. at 8-19.²

On September 6, 2019, the Ninth Circuit ruled that PCFFA’s lawsuit challenging SLDMWA’s and the Bureau of Reclamation’s failure to secure an NPDES permit for the GBP as required by the CWA was wrongfully dismissed by the district court. The Ninth Circuit held that

² The Ninth Circuit’s Slip Opinion in *PCFFA v. Glaser* is attached as Exhibit 1.

“Congress intended for discharges that include return flows from activities unrelated to crop production to be excluded from the statutory exception, thus requiring an NPDES permit for such discharges.” *PCFFA v. Glaser*, Slip Op. at 15. The wastewaters discharged through the GBP, and specifically through the Drain, are comingled and include both agricultural return flows and non-agriculture wastewater. Therefore, an NPDES permit is required for operation of the Drain.

The Court correctly ruled that “the defendant carries the burden to demonstrate the applicability of a statutory exception to the CWA” and that neither SLDMWA nor Reclamation had presented such evidence. *Id.*, at 10. Indeed, they could not carry that burden because there is overwhelming evidence to the contrary that the flows through the Drain are not composed “entirely” of irrigated agricultural return flows. As PCFFA properly alleged, “discharges from highways, residences, seepage into the [Drain] from adjacent [unfarmed] lands, and sediments from within the [Drain]” comingle with the irrigated agriculture return flows. *Id.*, at 17. Because the polluted waters that discharge from the Drain are comingled flows, the Drain cannot lawfully operate without an NPDES permit. Therefore, SLDMWA cannot authorize an extension of the GBP Use Agreement unless and until such a permit has been lawfully obtained.

II. Extension of the Use Agreement Will Cause New Significant Environmental Effects and Will Substantially Increase the Severity of Previously Identified Effects Necessitating Preparation of an SEIR/SEIS.

The Addendum studies the impacts of the Long-Term Storm Water Management Program (“LTSWMP”). If approved, the LTSWMP will add approximately 200 acres of “storage basins,” expand the Project’s reuse area and otherwise modify the operation of the Project. These changes will have significant impacts that require preparation of an SEIR and SEIS. SLDMWA’s contrary claims are meritless.

A. Surface Water, Groundwater, and Soils

The Addendum states that the LTSWMP’s use of 200 acres of storage basins to collect storm water for subsequent release will not significantly impact water quality. Addendum 3-4. The Addendum claims that, by impounding storm flows, and metering their release onto the reuse area, contaminated discharges would be reduced or avoided. *Id.* This assertion is based on the assumption that storm water that would be collected in these storage basins from December to May would not discharge pollutants such as selenium, boron, salt, and molybdenum to Mud Slough and thence the San Joaquin River. Addendum 3-3. That premise is false. An NPDES permit is therefore required for any such discharge. Unless and until an NPDES permit is secured, this project may not proceed further.

In an attempt to reduce the contaminated groundwater in these discharges, the LTSWMP calls for wastewater sumps to be turned off “prior to and during wet weather flows.” *Id.* But as the impounded storm water collects in these storage basins, it will interact with the already

impaired groundwater and soils underlying and surrounding the basins, and collect and mobilize these contaminants. Hence, the impounded wastewater will simply create additional saturated soils, ponds of contaminated water, and polluted run-off, all of which will continue to enter the Drain through seepage, and ultimately discharge into Mud Slough.

Further, the approximately 180,000 cubic yards – so far – of contaminated sediment SLDMWA claims it has removed from the Drain will leach additional contaminants back into the system. Much of this sediment was apparently relocated – but never treated – to old drains, and placed in other parts of the reuse area. Water will continue to infiltrate this contaminated sediment, and remobilize these contaminants – including high levels of selenium and other pollutants – into the water table, and the San Luis Drain.

The LTSWMP would also expand the size of the reuse area. The Addendum states that the expansion is necessary because the existing reuse area cannot successfully manage the seleniferous water without dangerous ponding. Addendum 1-11. In other words, the reuse area was unable to serve the purpose for which it was designed. Instead of reevaluating the wisdom of the system, SLDMWA is doubling-down on the Project by expanding its size. But the SLDMWA did not perform any new modeling of the water quality impacts associated with the LTSWMP, including impacts resulting from the increase in the size of the reuse area or the use of these storage basins. Addendum 3-11. By relying on out-of-date modeling that does not accurately reflect the LTSWMP's impacts or the conditions at the reuse area, SLDMWA has precluded informed decisionmaking and therefore failed to comply with CEQA and NEPA. Under CEQA Guidelines section 15162 and 40 C.F.R. section 1502.9(c), these new and substantially increased impacts must be thoroughly studied in an SEIR/SEIS.

B. Biology

The changes contemplated in the Addendum will substantially increase the severity of previously identified biological impacts and cause significant new biological impacts that were not considered in the 2009 FEIS/FEIR. For example, the Addendum proposes “to accumulate storm water in the [storage basins in the GDA] as needed to reduce peak flows during high rainfall events . . . for subsequent release of the storm water through the Drain or to the reuse area.” Addendum 2-3. As the Addendum acknowledges, use of storage basins in the GDA has the potential to expose waterfowl to water with elevated selenium levels if the basins cannot promptly be drained. Addendum 2-3. But nothing in the Addendum, 2009 FEIS/FEIR, or the Initial Study indicates that the basins will be promptly drained, or that these impacts will be otherwise mitigated to insignificance.

The Addendum claims that “[w]ater in the basins would be distributed to the SJRIP to meet irrigation demand as soon as practical,” but “as soon as practical” does not ensure that the basins will be “promptly drained” to protect wildlife. Addendum 2-3. In fact, SLDMWA will only deviate from its primary goal of distributing the water “as soon as practical” “[i]n rare cases

... to prevent evapo-concentration if there is not sufficient reuse capacity to drain the basins.” Addendum 2-3 to 2-4. The only guarantee the Addendum provides is that the basins would be emptied by late May. Addendum 2-4. Aside from a late May deadline, the Addendum fails to provide any guidelines or criteria for when the basins will be drained, nor does it even consider what actions and facilities would be needed to promptly drain the basins to protect wildlife.

The Addendum and Initial Study argue that mitigation measures designed to limit impacts of irrigation ditches in the 2009 FEIS/FEIR will help “avoid impacts to wildlife” from these storage basins, but the mitigations proposed are probably – if not demonstrably – ineffective and have their own impacts that must be considered in an SEIR/SEIS. Addendum 2-3; Initial Study 2-14 to 2-16. The 2009 FEIS/FEIR proposed mitigations to make irrigation ditches less attractive and to haze birds to limit nesting and foraging in those irrigation ditches. Addendum 3-6. The majority of the measures designed to make irrigation ditches less attractive are inapplicable to the storage basins, both because the physical structures are different and because the storage basins already exist, limiting the potential to incorporate mitigations. And hazing has significant impacts because it displaces wildlife from its foraging, breeding and nesting habitat. Those impacts must be examined in an SEIR/SEIS. CEQA Guidelines § 15162(a); 40 C.F.R. § 1502.9(c). In any event, hazing would be ineffective because it relies on observation to determine when it is necessary – a self-defeating requirement since these storage basins will not be monitored 24 hours a day, 7 days a week.

Furthermore, the project includes a 1,450-acre expansion of the existing reuse facility – the SJRIP – to 7,550 acres. The 2009 FEIS/FEIR analyzed a 6,100 acre reuse facility, and the proposed expansion “is an additional 650 acres over the maximum size anticipated in the 2009 Final EIS/EIR.” Addendum 2-5; 2009 FEIS/FEIR 2-2. While the “additional acreage would be managed in the same manner as the existing acreage with the same biological monitoring requirements established by the U.S. Fish and Wildlife Service (USFWS) in their Biological Opinion,” that does not negate the significant new and increased impacts that this substantial change will have on the surrounding environment. Addendum 2-5; CEQA Guidelines § 15162(a); 40 C.F.R. § 1502.9(c). As the Addendum admits, “[t]he primary environmental concern is an increased potential for ponding of seleniferous water within the fields of the SJRIP, which could be an attractive nuisance to wildlife, particularly birds.” Addendum 2-5.

Indeed, in “2003, a pasture at the existing reuse area site attracted waterfowl when it was inadvertently flooded. This flooded area created ideal ecological conditions for shorebird foraging and nesting and thus, a number of pairs responded opportunistically and bred in the field. *Recurvirostrid eggs collected near the pasture had highly elevated [selenium] concentrations.*” Addendum 3-6 to 3-7 (emphasis added). But the Addendum dismisses this concern, claiming that “other impacts would be created if the area is not enlarged to handle agricultural drainage.” Addendum 2-5. But deliberating exposing waterfowl to these poisonous waters is a crime under the takings prohibition of the Migratory Bird Treaty Act, 16 U.S.C. section 703. An SEIR/SEIS is needed both to assess the Project’s impacts on wildlife, and also

to determine what these “other” undisclosed impacts may be and to allow the public and decisionmakers to weigh them and make an informed decision.

The Addendum and Initial Study again rely on ineffective mitigation measures from the 2009 FEIS/FEIR in an ill-advised attempt to reduce these new significant and substantially increased impacts. Supposedly, “[m]itigation contained in the Grassland Bypass Project Final EIS/EIR for the existing reuse facility would apply to this area also. This mitigation includes a contingency plan in the event of inadvertent flooding in the reuse area due to breakage of a water supply canal or delivery facility.” Addendum 2-5; Initial Study 1-11. But this one-page contingency plan is vague and fails to provide any enforceable guidelines. The plan, if it can even be called that, recommends that “ponded water . . . be eliminated through the discharge of the water into a tail-water return system *or* by pumping the water into one of the supply channels in the project *or* a tail-water return system” within 24 hours. Initial Study, Appendix D, D-2 (emphasis added). But nothing in this contingency plan explains when or how to utilize any of the options presented. Nor does the plan enforce the 24-hour ponding elimination requirement. Instead, the contingency plan defers mitigation for ponding that occurs for more than 24 hours, stating that “an event-specific monitoring plan will be developed to monitor the impacts on bird species resulting from exposure to ponded water.” Initial Study, Appendix D, D-2. In other words, make it up as you go. That approach is the exact opposite of the searching examination and public review of a project’s impacts *before project approval* that CEQA and NEPA demand.

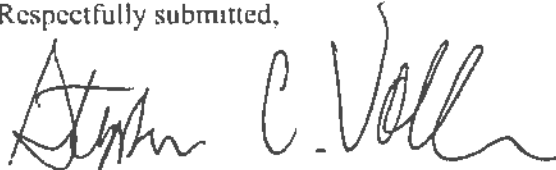
While acknowledging that the SJRIP field will be increased in size, that field flooding has occurred, and that the flooded field created “ideal ecological conditions for shorebird foraging and nesting, and thus, a number of pairs responded opportunistically and bred in the [contaminated] field,” the Addendum simultaneously dismisses this concern. Instead, SLDMWA claims that a vague and unenforceable mitigation measure that was never analyzed with regard to a reuse area of this size is sufficient. But it is not. An SEIR/SEIS is required to analyze the impacts of the proposed project. CEQA Guidelines § 15162; 40 C.F.R. § 1502.9(c).

For the foregoing reasons, particularly the Ninth Circuit’s recent ruling requiring an NPDES permit for commingled discharges of pollutants into a water of the United States, any extension of the GBP Use Agreement should be denied. SLDMWA must prepare an SEIR/SEIS to consider the impacts of the proposed Project, including the impacts to surface water, groundwater, soil, and biology. SLDMWA’s reliance on an Addendum to support this highly impactful extension violates the CWA, CEQA and NEPA.

Please make these comments part of the public record in this proceeding.

Joseph C. McGahan
September 13, 2019
Page 8

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Stephan C. Volker". The signature is fluid and cursive, with the first name "Stephan" written in a more compact, stylized manner and the last name "Volker" written in a more extended, flowing script.

Stephan C. Volker

Attorney for Pacific Coast Federation of Fishermen's
Associations, California Sportfishing Protection Alliance,
Friends of the River, San Francisco Crab Boat Owners
Association, Inc., Institute for Fisheries Resources, and
Felix Smith

Joseph C. McGahan
September 13, 2019
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Enclosures

LIST OF EXHIBITS

1. *Pacific Coast Federation of Fisherman's Associations, et al. v. Glaser, et al.*, Ninth Circuit Case No. 17-17130, September 6, 2019 (for publication)

(Omitted from 12-23-2019 Letter)

EXHIBIT

2

Stephan C. Volker
Alexis E. Krieg
Stephanie L. Clarke
Jamey M.B. Volker (Of Counsel)

Law Offices of
Stephan C. Volker
1633 University Avenue
Berkeley, California 94703
Tel: (510) 496-0600 ♦ Fax: (510) 845-1255
svolker@volkerlaw.com

10.497.01

November 5, 2019

via email

Ashley.Peters@waterboards.ca.gov

jmcgahan@summerseng.com

Central Valley Regional Water Quality
Control Board
11020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670-6114

Joseph C. McGahan, Drainage Coordinator
San Luis & Delta-Mendota Water Authority
P.O. Box 2157
Los Banos, CA 93635

Re: Comments of North Coast Rivers Alliance, Pacific Coast Federation of Fishermen's Associations, Institute for Fisheries Resources, San Francisco Crab Boat Owners Association, California Sportfishing Protection Alliance, and Felix Smith, on Tentative Waste Discharge Requirements for Surface Water Discharges from the Grassland Bypass Project Operated by the San Luis and Delta-Mendota Water Authority and United States Bureau of Reclamation

Ms. Peters:

On behalf of North Coast Rivers Alliance, Pacific Coast Federation of Fishermen's Associations, Institute for Fisheries Resources, San Francisco Crab Boat Owners Association, California Sportfishing Protection Alliance, and Felix Smith, we submit the following comments on the October 7, 2019, Tentative Waste Discharge Requirements for the San Luis and Delta-Mendota Water Authority and United States Bureau of Reclamation for Surface Water Discharges from the Grassland Bypass Project ("Project"), scheduled to be discussed at the Central Valley Regional Water Quality Control Board ("Regional Board") Meeting on December 5, 2019 and December 6, 2019. Please include these comments in the public record.

In operating the Grassland Bypass Project ("GBP"), the San Luis and Delta-Mendota Water Authority ("SLDMWA") and United States Bureau of Reclamation ("Reclamation") discharge pollutants into waters of the United States through the San Luis Drain ("SLD"), a point source. The SLD collects and commingles polluted water from a variety of sources, both ground and surface, and conveys this pollution into Mud Slough and thence the San Joaquin River and the Delta. The tentative Waste Discharge Requirements ("WDRs") for the GBP address *only* agricultural subsurface drainage flows and stormwater discharges. WDRs ¶ 2. They are not

sufficient because they allow the SLD's harmful discharges to Mud Slough to continue at unacceptable levels, and without the National Pollutant Discharge Elimination System ("NPDES") Permit required by law, violating the letter and the spirit of the Porter-Cologne Water Quality Control Act (Water Code § 13000 et seq.), and the Clean Water Act (33 U.S.C. § 1251 et seq.). Approval of the WDRs as written would likewise violate the Public Trust Doctrine and the Delta Reform Act, as these discharges will harm the public trust resources that depend on the receiving waters, and lead to further degradation and destruction of the Delta ecosystem.

I. THE WDRS SANCTION UNLAWFUL DISCHARGES

A. The GBP Discharges Pollutants to Mud Slough from Activities Unrelated to Crop Production

The WDRs state they are not intended to address "any discharges from activities other than those related to crop production." WDRs ¶ 3. But in fact they do exactly that. It is indisputable that the discharges from the SLD to Mud Slough are *commingled* flows that discharge pollutants to Mud Slough, and downstream waters from sources that are *not* related to crop production. The Ninth Circuit has ruled that these commingled discharges from the SLD require an NPDES permit. *Pacific Coast Federation of Fishermen's Associations v. Donald R. Glaser*, 937 F.3d 1191, 1199 (9th Cir. 2019) ("PCFFA"). The WDRs ignore and unlawfully allow the discharge of pollutants to waters of the United States without the required NPDES permit, in violation of the Clean Water Act.¹

The WDRs would apply to the expanded Project described in SLDMWA's 2019 Addendum to the Final Environmental Impact Statement / Environmental Impact Report for the Grassland Bypass Project ("2019 Addendum"). The Project includes the use of 200 acres of storage basins to collect storm water for subsequent reuse. It may be that some of this water will be applied to salt-tolerant crops, to the extent that the GBP reuse area has capacity to accept such contaminated water. But during storm events, saturated soils underlying and surrounding these storage basins, and the SLD itself, will continue to cause seepage into the SLD. It is likely that, during the ponding and reuse process, the contaminated water will have *higher* concentrations of selenium, boron, salt, molybdenum, pesticides, and other pollutants. Regardless of its path, the contaminated water will eventually enter the SLD – a point source – and be discharged into Mud Slough. Under *PCFFA*, an NPDES permit is required for this discharge.

¹ While the WDRs state they address only discharges related to crop production (¶ 3), they acknowledge that "discharge limits apply to selenium from the sediment [deposited in the San Luis Drain] as well as selenium in drainage water." WDRs ¶ 18.

B. The WDRs Allow Discharges That Will Have Significant Negative Impacts on the Receiving Waters

The SLD conveys and discharges contaminated water that contains high levels of selenium, boron, molybdenum, and other pollutants. The Regional Board acknowledges that the SLD's discharge into Mud Slough harms "the last six miles of Mud Slough (north)" by adversely impacting its water quality and biota. WDRs ¶ 32. These six miles are those between the SLD's terminus and Mud Slough's confluence with the San Joaquin River. Despite these adverse impacts, the WDRs allow this unacceptable discharge because it will be diluted by other flows.

But dilution is not the solution to pollution. SLDMWA's 2019 Addendum acknowledges that the Project will discharge selenium at levels in excess of the 5 parts per billion ("ppb")² 4-day average set by the Water Quality Control Plan, Fifth Edition, for the Sacramento River and San Joaquin River Basins ("Basin Plan") when "dilution flows in Mud Slough upstream of the [SLD] are reduced." 2019 Addendum 3-3. Yet SLDMWA's 2019 Addendum, as approved, commits only to vague efforts to develop undefined and unproven "adaptive management approach[es] to implement additional corrective actions" when the 4-day limit is exceeded.

In addition, the 2019 Addendum relies upon attainment of selenium load targets set by the Long-Term Storm Water Management Plan, as measured at Site B (the terminus of the SLD into Mud Slough), to downplay the impacts of the SLD's excessive selenium discharges. 2019 Addendum 3-4. But the load level can be measured after it is diluted downstream at Crows Landing, rather than in Mud Slough where it is most likely to be exceeded. Thus, the Regional Board proposes to allow selenium discharges at levels that are unacceptably high, so long as the 5 micrograms per liter ("µg/L") selenium objective is met by the time the discharges have been diluted at Crows Landing. WDRs ¶ 15. Moreover, as discussed in more detail below, the 5 µg/L selenium objective is not sufficiently protective of fish or other aquatic life, as it uses the Environmental Protection Agency's ("EPA's") now-superseded 1999 selenium criteria.³

The WDRs allow these damaging discharges to continue, in part, because "a plan will be submitted" to address efforts to reduce use of the SLD, on an annual basis. WDRs ¶ 32(c). This requirement was also contained in the 2015 WDRs, but did not achieve its objective then. The creation of annual drainage reduction plans has failed to eliminate the continued harmful drainage.

² This standard can also be expressed as 5 micrograms per liter ("µg/L").

³ Lemly, A.D (2002) Selenium Assessment in Aquatic Ecosystems: A Guide for Hazard Evaluation and Water Quality Criteria. Springer-Verlag, New York; Aquatic Life Ambient Water Quality Criterion for Selenium in Freshwater 2016 – Fact Sheet, available at: https://www.epa.gov/sites/production/files/2016-06/documents/se_2016_fact_sheet_final.pdf

The Regional Board has the authority and ability to curtail these harmful discharges by enforcing the water quality standards established in the Basin Plan, and protecting the resources and beneficial uses under its jurisdiction. It must act now to prevent the Project's harmful discharges from continuing to degrade water quality in Mud Slough, the San Joaquin River, and Delta.

C. SLDMWA and Reclamation Must Obtain an NPDES Permit for the Grassland Bypass Project

The WDRs state that the Regional Board “will begin the appropriate permitting process” for the Grassland Bypass Project after the final resolution of the litigation that the Ninth Circuit decided in *PCFFA*, “if . . . it is determined that additional permitting is needed for discharges from the Grassland Drainage Area.” WDRs ¶ 3. But the time for this permitting is now, not later. The Ninth Circuit’s ruling in *PCFFA* makes clear that commingled discharges – like those of the SLD – are *not* subject to the agricultural return flow exemption, and require an NPDES permit. *PCFFA*, 937 F.3d at 1199. Under this ruling the Regional Board may not allow discharges from the SLD to Mud Slough unless an NPDES permit is obtained.

II. WDRS FAIL TO PROTECT BENEFICIAL USES AND PUBLIC TRUST RESOURCES

Allowing the Project’s discharges of selenium, boron, molybdenum, salt, pesticides, and other pollutants unlawfully impairs protected beneficial uses and harms public trust resources.

Selenium is toxic to biological resources, both avian and aquatic. The EPA’s 2016 Aquatic Life Ambient Water Quality Criterion for Selenium (“Selenium Criterion”) sets a four-part criterion, which includes fish tissue and water column components. The water column components include a 30-day lentic concentration of 1.5 µg/L (which applies in lakes and impoundments) and a 30-day lotic concentration of 3.1 µg/L (which applies in rivers and streams) as the recommended selenium concentration limit. For intermittent exposure, the Selenium Criterion recommends the implementation of an intermittent exposure equation.⁴ EPA recommends that the 30-day and intermittent water column concentration levels not be exceeded more than once every three years on average. The fish tissue concentration limits are continuous and may never be exceeded. For eggs and ovaries, the concentration limit is 15.1 milligrams per kilogram dry weight. The whole body or muscle concentration is either 8.5 milligrams per

⁴ $WQC_{int} = (WQC_{30-day} - C_{bkgnd} (1 - f_{int})) / f_{int}$, “where WQC_{30-day} is [either the lentic or lotic] monthly element . . . C_{bkgnd} is the average background selenium concentration, and f_{int} is the fraction of any 30-day period during which elevated selenium concentrations occur, with f_{int} assigned a value ≥ 0.033 (corresponding to 1 day).” 2016 Aquatic Life Ambient Water Quality Criterion for Selenium – Freshwater, Table 4.1.

kilogram dry weight, for whole body measurements, or 11.3 milligrams per kilogram dry weight muscle measurements, which are taken from skinless, boneless filets. The Selenium Criterion addresses the bioaccumulative risks of selenium exposure on fish, including those that occur from short-term, high exposure events. The EPA's recommended levels are more protective, overall, than the 5 µg/L 4-day average included in the Basin Plan and WRDs.

Under the Basin Plan, the beneficial uses of Mud Slough (North) include "limited irrigation supply, stock watering, water contact recreation and noncontact water recreation, sportfishing, shellfish harvesting, warm water aquatic habitat, warm water spawning and wildlife habitat." WRDs ¶ 12; Basin Plan Table 2-1, pp. 2-14 to 2-15. Discharges must not impair these beneficial uses. Yet the GBP's discharges of contaminated water to Mud Slough will continue under the WRDs – and may increase as the GBP expands – at levels that are higher than those protective of aquatic life.

The Public Trust Doctrine requires agencies that manage public trust resources, including the Regional Board, to avoid or mitigate impacts to public trust resources whenever feasible. *National Audubon Society v. Superior Court* (1983) 33 Cal.3d 419, 426; *Marks v. Whitney* (1971) 6 Cal.3d 251, 259; *San Francisco Baykeeper Inc. v. State Lands Com.* (2018) 29 Cal.App.5th 562, 570-571. By allowing discharges at levels that will harm aquatic life and birds, the Regional Board's WRDs are insufficient to protect public trust resources. Therefore they violate the Public Trust Doctrine.

III. THE REGIONAL BOARD'S WRDs ARE INSUFFICIENT TO COMPLY WITH APPLICABLE REQUIREMENTS OF CEQA

The Regional Board relies on the environmental analysis performed by SLDMWA in its 2019 Addendum to satisfy the requirements of the California Environmental Quality Act, Public Resources Code section 21000 et seq. ("CEQA").⁵ WRDs ¶¶ 29-32. But the 2019 Addendum is not sufficient. As discussed in the September 13, 2019, comment letter from the Pacific Coast Federation of Fishermen's Associations and the Institute for Fisheries Resources to SLDMWA (attached as Exhibit 1 and incorporated herein by reference), the Addendum fails to appropriately study and disclose the significant impacts of the Grassland Bypass Project. Further, the WRDs themselves are insufficient to evaluate and avoid or mitigate the impacts of the Project.

⁵ Water Code section 13389 exempts the Regional Board from complying with Chapter 3 of the California Environmental Quality Act, which addresses Environmental Impact Reports prepared by State Agencies. Water Code section 13389 does not exempt the Regional Board from other portions of CEQA. By relying upon the inadequate 2019 Addendum, the Regional Board has failed to appropriately study and mitigate the impacts of the Grassland Bypass Project.

IV. THE TENTATIVE WDRS ALLOW DISCHARGES THAT DAMAGE THE DELTA ECOSYSTEM, IN VIOLATION OF THE DELTA REFORM ACT

The Delta Reform Act requires any state agency “that proposed to undertake a covered action” to “prepare a written certification of consistency with detailed findings as to whether the covered action is consistent with the Delta Plan,” and submit the written findings to the Delta Stewardship Council. Water Code § 85225. It defines “[c]overed action” as a “plan, program, or project” as defined by Public Resources code section 21065, that:

- (1) Will occur, in whole or in part, within the boundaries of the Delta or Suisun Marsh.
- (2) Will be carried out, approved, or funded by the state or a local public agency.
- (3) Is covered by one or more provisions of the Delta Plan.
- (4) Will have a significant impact on achievement of one or both of the coequal goals or the implementation of government-sponsored flood control programs to reduce risks to people, property, and state interests in the Delta.

Water Code § 85057.5(a). The Project discharges pollutants to the Delta that harm its fish and wildlife and therefore will have a significant impact on achievement of the Delta Reform Act’s coequal goals. “‘Coequal goals’ means the two goals of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. The coequal goals shall be achieved in a manner that protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place.” Water Code §85054.

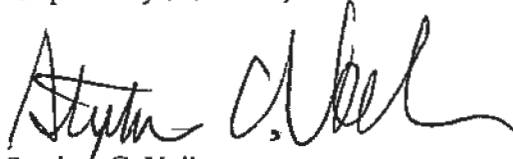
Neither SLDMWA nor the Regional Board has addressed whether the Project is consistent with the Delta Plan or the coequal goals of the Delta Reform Act. The Delta Plan, however, acknowledges that the 5 µg/L objective for chronic exposure “may not be sufficient” for aquatic organisms and fish. Delta Plan, Chapter 6, p. 228. The Delta Plan recommends that projects maintain water quality “at a level that supports, enhances, and protects” the beneficial uses identified in the Basin Plan. WQ R1. As formulated, the WDRs permit harmful discharges that degrade the quality of the Delta ecosystem, contrary to the Delta Reform Act and the Delta Plan’s requirements that projects restore, protect, and enhance the Delta ecosystem. Water Code §§ 85054, 85066; Delta Plan Chapters 4 (Protect, Restore and Enhance the Delta Ecosystem) and 6 (Water Quality). The Project is neither consistent with the Delta Plan nor the coequal goal of “protecting, restoring, and enhancing the Delta ecosystem.” Water Code § 85054.

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CONCLUSION

For the foregoing reasons, the WRDs as proposed violate several environmental laws. These discharges require an NPDES permit, and may not be allowed unless and until an NPDES permit regulating them is issued. They also require additional environmental review under CEQA. Further, they must be revised, as they allow SLDMWA to discharge pollutants into Mud Slough at levels that harm beneficial uses and public trust resources in violation of the Porter Cologne Act, the Clean Water Act, the Public Trust Doctrine and the Delta Reform Act.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Stephan C. Volker', written over a horizontal line.

Stephan C. Volker

Attorney for North Coast Rivers Alliance, Pacific Coast
Federation of Fishermen's Associations, California
Sportfishing Protection Alliance, Friends of the River, San
Francisco Crab Boat Owners Association, Inc., Institute for
Fisheries Resources, and Felix Smith

EXHIBIT

3

STEPHAN C. VOLKER (CBN 63093)
ALEXIS E. KRIEG (CBN 254548)
STEPHANIE L. CLARKE (CBN 257961)
LAW OFFICES OF STEPHAN C. VOLKER
1633 University Avenue
Berkeley, California 94703
Tel: 510/496-0600
Fax: 510/845-1255
Attorneys for Petitioners and Plaintiffs
NORTH COAST RIVERS ALLIANCE, SAN
FRANCISCO CRAB BOAT OWNERS
ASSOCIATION, CALIFORNIA SPORTFISHING
PROTECTION ALLIANCE, PACIFIC COAST
FEDERATION OF FISHERMEN'S
ASSOCIATIONS, and INSTITUTE FOR
FISHERIES RESOURCES

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Merced Superior Court
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Amanda Toste
Clerk of the Superior Court
By: Melissa Chavez, Deputy

SUPERIOR COURT OF THE STATE OF CALIFORNIA

COUNTY OF MERCED

NORTH COAST RIVERS ALLIANCE, SAN
FRANCISCO CRAB BOAT OWNERS
ASSOCIATION, CALIFORNIA
SPORTFISHING PROTECTION ALLIANCE,
PACIFIC COAST FEDERATION OF
FISHERMEN'S ASSOCIATIONS, and
INSTITUTE FOR FISHERIES RESOURCES,

Petitioners and Plaintiffs,

v.

SAN LUIS AND DELTA-MENDOTA WATER
AUTHORITY, and DOES 1 through 100,

Respondents and Defendants,

UNITED STATES BUREAU OF
RECLAMATION, and DOES 101 through 200,

Real Parties in Interest.

Civ. No. 19CV-04989

**VERIFIED PETITION FOR WRIT OF
MANDATE AND COMPLAINT FOR
DECLARATORY AND INJUNCTIVE
RELIEF AND ATTORNEYS' FEES**

CEQA CASE

Petitioners and Plaintiffs NORTH COAST RIVERS ALLIANCE, SAN FRANCISCO CRAB
BOAT OWNERS ASSOCIATION, CALIFORNIA SPORTFISHING PROTECTION ALLIANCE,
PACIFIC COAST FEDERATION OF FISHERMEN'S ASSOCIATIONS, and INSTITUTE FOR

1 FISHERIES RESOURCES (collectively “petitioners” or “NCRA”) hereby petition the Court for a writ
2 of mandate against defendant and respondent SAN LUIS AND DELTA-MENDOTA WATER
3 AUTHORITY (“the Authority”) and by this Verified Petition for Writ of Mandate and Complaint for
4 Declaratory and Injunctive Relief and for Attorney’s Fees (“Verified Petition”) hereby allege as follows:

5 **INTRODUCTION**

6 1. This is a public interest citizen suit to enforce the California Environmental Quality Act,
7 Public Resources Code (“PRC”) section 21000 et seq. (“CEQA”), the Sacramento-San Joaquin Delta
8 Reform Act, Water Code section 85000 et seq. (“Delta Reform Act”), the Public Trust Doctrine and the
9 Clean Water Act, 33 U.S.C. section 1251 *et seq.* (“CWA”). Petitioners bring this action to challenge the
10 Authority’s October 10, 2019 certification of the Addendum to the Final 2009 EIS/EIR (“Addendum”) for the
11 Grassland Bypass Project (“GBP”), and all related approvals including the continuation and
12 modification of the Grassland Bypass Project, adoption of the Long-Term Storm Water Management
13 Plan 2020-2045, approval of a Mitigation Monitoring and Reporting Program, adoption of CEQA
14 Findings, and approval of a Statement of Overriding Considerations (collectively, “the Project”) which
15 will extend the term of the GPD Use Agreement. In approving the Project, the Authority violated
16 CEQA, the Delta Reform Act, the Public Trust Doctrine and the Clean Water Act.

17 2. CEQA is California’s preeminent environmental law. It requires all public agencies to
18 examine the potential adverse impacts of their actions before taking them. It is designed to protect
19 California’s extraordinary environmental resources from uninformed and needlessly destructive agency
20 actions.

21 3. CEQA requires the Authority to fully examine the impacts of its actions and to carefully
22 consider alternatives and mitigation measures that would reduce those impacts. “[I]f there are feasible
23 alternatives or feasible mitigation measures available which would substantially lessen the significant
24 environmental effects” of a project, then CEQA forbids the Authority from approving the project. PRC
25 § 21002.

26 4. The Public Trust Doctrine requires the Authority to identify beneficial uses of navigable
27 waters, including those dependent on public trust resources, and to establish and achieve the water
28 quality standards necessary to protect them.

6. The Authority improperly approved the Project, thus allowing the extension of the GBP Use Agreement, without adequately examining the environmental impacts of doing so, without adequately protecting public trust resources and uses, and without compliance with state and federal laws protecting the Bay-Delta and its southern tributaries including the San Joaquin River and Mud Slough, and their public trust resources and uses, from pollutants.

7. This Court has jurisdiction over this proceeding pursuant to Code of Civil Procedure (“CCP”) sections 526 (injunctive relief), 1060 (declaratory relief), 1085 (traditional mandamus) and 1094.5 (administrative mandamus); PRC sections 21168 (CEQA administrative mandamus) and 21168.5 (CEQA traditional mandamus); and article VI, section 10 of the California Constitution.

8. Venue is proper in this Court pursuant to CCP sections 393 (actions against public officers) and 395 (actions generally) because the Authority's offices are located in Los Baños, California in Merced County, and a substantial part of the Project is located within Merced County.

9. Pursuant to CCP section 388, petitioners are serving the California Attorney General with a copy of this Verified Petition. Consistent with PRC section 21167.5, petitioners timely transmitted notice of this suit to the Authority and the California Attorney General.

10. Petitioner NORTH COAST RIVERS ALLIANCE (“NCRA”) is a non-profit unincorporated association with members throughout Northern California. NCRA was formed for the purpose of protecting California’s rivers and their watersheds from the adverse effects of excessive water diversions, ill-planned urban development, harmful resource extraction, pollution, and other forms of environmental degradation. Its members use and enjoy California’s rivers and watersheds for recreational, aesthetic, scientific study, and related non-consumptive uses. The interests of NCRA and

its members will be adversely affected and injured by the Project unless the relief requested herein is granted.

11. Petitioner SAN FRANCISCO CRAB BOAT OWNERS ASSOCIATION, INC. ("San Francisco Fishermen") is a century-old association of owners and operators of small, family-owned fishing boats that catch Dungeness crab, wild California King salmon, Pacific herring, and other species that live in and depend upon the cold waters of the Pacific Ocean, and San Francisco Bay-Delta and the Sacramento and San Joaquin Rivers and their tributaries. San Francisco Fishermen is also actively involved in community education and advocacy concerning fisheries resources legislation to ensure that the rich heritage of commercial fishing in the Bay Area will survive for future generations. San Francisco Fishermen and its members will be harmed by the Project because it would threaten their continued historic use and enjoyment of the fisheries resources of the Delta and its tributary and connected ecosystems.

12. Plaintiff CALIFORNIA SPORTFISHING PROTECTION ALLIANCE ("CalSPA") is a non-profit corporation organized under the laws of the State of California. CalSPA has thousands of members who reside and recreate throughout California. CalSPA's members are citizens who, in addition to being duly licensed sport fishing anglers, are interested in the preservation and enhancement of California's public trust fishery resources and vigorous enforcement of California's environmental laws. CalSPA members have been involved for decades in public education and advocacy efforts to protect and restore the public trust resources of California's rivers. CalSPA members use California's rivers and the Delta for recreation, scientific study and aesthetic enjoyment. The interests of CalSPA and its members will be adversely affected and injured by the Project unless the relief requested herein is granted.

13. Petitioner PACIFIC COAST FEDERATION OF FISHERMEN'S ASSOCIATIONS ("PCFFA") is a nonprofit membership organization incorporated in 1976 with headquarters located in San Francisco, California. PCFFA comprises more than 14 separate commercial fishing and vessel owners' associations situated along the West Coast of the United States. By virtue of its combined membership of approximately 750 fishermen and women, PCFFA is the single largest commercial fishing advocacy organization on the West Coast. PCFFA represents the majority of California's

1 organized commercial salmon fishermen and has been an active advocate for the protection of Pacific
2 salmon and their spawning, rearing and migratory habitat for more than 30 years. PCFFA and its
3 members would be harmed by the proposed Project unless the relief requested herein is granted.

4 14. Petitioner INSTITUTE FOR FISHERIES RESOURCES (“IFR”) is a non-profit, tax-exempt
5 organization that works to protect and restore salmon and other fish populations and the human
6 economies that depend on them. IFR maintains its principal place of business in San Francisco,
7 California. IFR both funds and manages many fish habitat protection programs and initiatives. In that
8 capacity, IFR advocates for reforms to protect fish health and habitat throughout the West Coast of the
9 United States and has successfully advocated for dam removals, improved pesticide controls, better
10 forestry stream protection standards, reduced discharge of pollutants, and enhanced marine and
11 watershed conservation regulations throughout the West Coast. IFR has worked tirelessly for years to
12 restore and enhance the Delta and its beleaguered fish and wildlife. IFR and its members will be directly
13 and indirectly injured by the Project unless the relief requested herein is granted..

14 15. Defendant SAN LUIS & DELTA-MENDOTA WATER AUTHORITY (“the Authority”)
15 serves 29 member agencies reliant upon water exported from the Bay-Delta by the Bureau of
16 Reclamation’s (“Reclamation’s”) Central Valley Project. The members of the Authority deliver water to
17 approximately 1.1 million acres of farmland and nearly 2 million California residents. The Authority, in
18 association with Reclamation, operates the Grassland Bypass Project. The Authority is also the lead
19 agency under CEQA for the Project and its Addendum to the 2009 EIS/EIR for the GBP Use Agreement.

20 16. The true names and capacities of respondents DOES 1-100, inclusive, are unknown to
21 petitioners who therefore sue such respondents by fictitious names pursuant to CCP section 474.
22 Petitioners are informed and believe, and based on such information and belief allege, that the
23 fictitiously named respondents are state or local officials or agencies who are responsible, in whole or in
24 part, for the approval and implementation of the Project. Petitioners will, with leave of Court if
25 necessary, amend this Verified Petition if and when the true names and capacities of said DOE
26 respondents have been ascertained.

27 17. Real party in interest the UNITED STATES BUREAU OF RECLAMATION
28 (“Reclamation”) is being sued in his official capacity. Reclamation is the federal agency within the

1 United States Department of the Interior charged with managing the Central Valley Project.
2 Reclamation, in association with the Authority, operates the Grassland Bypass Project.

3 18. The true names and capacities of real parties in interest DOES 101-200, inclusive, are
4 unknown to petitioners who therefore sue such respondents by fictitious names pursuant to CCP section
5 474. Petitioners are informed and believe, and based on such information and belief allege, that the
6 fictitiously named real parties in interest are state or local officials or agencies who are responsible, in
7 whole or in part, for the approval and implementation of the Project. Petitioners will, with leave of
8 Court if necessary, amend this Verified Petition if and when the true names and capacities of said Doe
9 respondents have been ascertained.

10 GENERAL ALLEGATIONS

11 19. Petitioners have authorized their attorneys to file this lawsuit on their behalf to vindicate
12 their substantial beneficial interest in securing the Authority's compliance with the law.

13 20. Petitioners have performed any and all conditions precedent to the filing of this Verified
14 Petition and Complaint and have exhausted any and all available administrative remedies to the extent
15 required by law.

16 21. Petitioners have no plain, speedy, and adequate remedy in the ordinary course of law within
17 the meaning of CCP section 1086 in that, unless this Court issues its writ of mandate setting aside the
18 Authority's approval of the Project, and ordering it to comply with the laws whose violation is alleged
19 herein, the environmental interests of petitioners and the public that are protected by those laws will be
20 substantially and irreparably harmed. No monetary damages or other legal remedy could adequately
21 compensate petitioners for the harm to their beneficial interests, and to the environment, occasioned by
22 the Authority's unlawful conduct.

23 22. Petitioners are entitled to declaratory relief under CCP section 1060 because an actual
24 controversy exists between petitioners and the Authority. Petitioners contend that the Authority has
25 acted in violation of applicable laws and must therefore vacate and set aside its approval of the Project.
26 Petitioners are informed and believe that the Authority disputes this contention. A judicial resolution of
27 this controversy is therefore necessary and appropriate.

28 23. Petitioners are also entitled to injunctive relief under CCP section 526 because the

Authority's approval of the Project threatens irreparable environmental harm. Unless enjoined, the Authority will implement the Project despite its lack of compliance with applicable laws, causing undue and unnecessary environmental degradation. Petitioners would thereby suffer irreparable harm due to the Authority's failure to take the required steps to adequately protect the environment. Injunctive relief is thus warranted under CCP section 525 *et seq.* and PRC section 21168.9 to prevent irreparable harm to the environment.

LEGAL BACKGROUND

CEQA

24. CEQA is California's primary statutory mandate for environmental protection. It applies to all state and local agencies, and requires them to "first identify the [significant] environmental effects of projects, and then to mitigate those adverse effects through the imposition of feasible mitigation measures or through the selection of feasible alternatives." *Sierra Club v. State Board of Forestry* (1994) 7 Cal.4th 1215, 1233. Its most important substantive imperative requires "public agencies to deny approval of a project with significant adverse effects when feasible alternatives or feasible mitigation measures can substantially lessen such effects." *Sierra Club v. Gilroy City Council* (1990) 222 Cal.App.3d 30, 41.

25. CEQA's mandate for detailed environmental review "ensures that members of the [governmental decision-making body] will fully consider the information necessary to render decisions that intelligently take into account the environmental consequences" of their proposed action. *Mountain Lion Foundation v. Fish and Game Commission* (1997) 16 Cal.4th 105, 133; PRC §§ 21080.5(d)(2)(D), 21091(d)(2); 14 C.C.R. [CEQA Guidelines] ("Guidelines") § 15088. The CEQA process thus "protects not only the environment but also informed self-government." *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 564.

26. California "public agencies" must comply with CEQA when they approve discretionary projects. PRC § 21080(a).

27. The Authority is a "public agency" and a "state agency" as defined in CEQA. PRC § 21063.

28. When an EIR has been prepared for a project, CEQA Guidelines section 15162 directs that a

Subsequent Environmental Impact Report (“SEIR”) be prepared where “[s]ubstantial changes are proposed in the project,” “[s]ubstantial changes occur with respect to the circumstances under which the project is undertaken,” or “[n]ew information of substantial importance” shows a change in the project’s effects, mitigation measures, or alternatives, such that new significant environmental effects or a substantial increase in the severity of previously identified significant effects, are now shown.

29. An addendum to an EIR is only allowed where changes are necessary but *none* of the conditions requiring preparation of an SEIR are met. Guidelines § 15164(a). If there are any “new significant environmental effects or a substantial increase in the severity of previously identified significant effects,” an SEIR— rather than an addendum – must be prepared. Guidelines §§ 15162(a), 15164(a). Similarly, if there are mitigation measures or alternatives “previously found not to be feasible [that] would in fact be feasible” or that are “considerably different . . . [and] would substantially reduce one or more significant effects,” an SEIR must be prepared. *Id.*

The Sacramento-San Joaquin Delta Reform Act

30. To address the indisputably perilous state of the Delta, in 2009 the California Legislature enacted the Sacramento-San Joaquin Delta Reform Act, Water Code section 85000 et seq. (“Delta Reform Act”), declaring that “[t]he Sacramento-San Joaquin Delta watershed and California’s water infrastructure are in crisis and *existing Delta policies are not sustainable*.” Water Code § 85001(a), emphasis added. The Legislature found that “‘the Delta’ . . . is a critically important natural resource for California and the nation. It serves Californians concurrently as both the hub of the California water system and the most valuable estuary and wetland ecosystem on the west coast of North and South America.” Water Code § 85002. “Resolving the crisis requires *fundamental reorganization* of the state’s management of Delta watershed resources.” Water Code § 85001(a), emphasis added.

31. The Delta Reform Act was enacted to advance the “coequal goals” of restoring the Delta ecosystem and ensuring water supply reliability.” Water Code § 85054. To this end, the Act requires adoption of a legally enforceable Delta Plan by the Delta Stewardship Council to achieve these coequal goals. It also requires any state agency “that proposes to undertake a covered action” to “prepare a written certification of consistency with detailed findings as to whether the covered action is consistent with the Delta Plan,” and submit the written findings to the Delta Stewardship Council. Water Code §

85225. It defines “[c]overed action” as a “plan, program, or project” as defined by Public Resources Code section 21065, that:

- (1) Will occur, in whole or in part, within the boundaries of the Delta or Suisun Marsh.
- (2) Will be carried out, approved, or funded by the state or a local public agency.
- (3) Is covered by one or more provisions of the Delta Plan.
- (4) Will have a significant impact on achievement of one or both of the coequal goals Water Code § 85057.5(a).

The Public Trust Doctrine

32. Water Code section 85023 states, “the longstanding constitutional principle of reasonable use and the public trust doctrine shall be the foundation of state water management policy and are particularly important and applicable to the Delta.”

33. In *United States v. State Water Resources Control Board* (1986) 182 Cal.App.3d 82, the court noted that the Public Trust Doctrine mandates “that the state as trustee of the public trust retains supervisory control over the state's waters such that no party has a vested right to appropriate water in a manner harmful to the interests protected by the public trust.” *Id.* at 149, citing *National Audubon Society v. Superior Court* (1983) 33 Cal.3d 419, 445. The court held that the Public Trust Doctrine necessarily requires agencies to “consider water quality for the protection of beneficial uses” when determining whether or not to approve a project. *Id.* at 150-151.

34. “Public trust easements are traditionally defined in terms of navigation, commerce and fisheries. They have been held to include the right to fish, hunt, bathe, swim, to use for boating and general recreation purposes the navigable waters of the state, and to use the bottom of the navigable waters for anchoring, standing, or other purposes.” *Marks v. Whitney* (1971) 6 Cal.3d 251, 259. For nearly 50 years it has been settled law in California that public trust values also “encompass[] . . . the preservation of those lands in their natural state, so that they may serve as ecological units for scientific study, as open space, and as environments which provide food and habitat for birds and marine life, and which favorably affect the scenery and climate of the area.”

35. Although compliance with CEQA “may assist an agency in complying with its duties under the public trust doctrine . . . [,] CEQA review of a project does not necessarily or automatically satisfy

1 the agency's affirmative duties to take the trust into account and protect public trust uses whenever
 2 feasible." *San Francisco Baykeeper Inc. v. State Lands Com.* ("Baykeeper II") (2018) 29 Cal.App.5th
 3 562, 571. "[A] public trust use is not any use that may confer a public benefit, but rather a use that
 4 facilitates public access, public enjoyment, or public use of trust land." *Id.* at 570. Consequently, uses
 5 of public trust resources for commercial purposes that do not facilitate public enjoyment of the resource
 6 are not public trust uses protected by the public trust doctrine. *San Francisco Baykeeper, Inc. v. State*
 7 *Lands Com.* ("Baykeeper I") (2015) 242 Cal.App.4th 202, 235-238. In deciding whether an activity
 8 impermissibly harms the public trust resource, "the determinative fact is the impact of the activity on the
 9 public trust resource." *Environmental Law Foundation v. State Water Resources Control Board* (2018)
 10 26 Cal.App.5th 844, 859.

11 12 FACTUAL BACKGROUND

13
14 36. The Grassland Bypass Project ("GBP"), which began in 1996, is a misguided attempt to
 15 reduce the load of selenium and other pollutants discharged from the Grassland Drainage Area ("GDA")
 16 into wetlands and refuges by diverting those discharges through the San Joaquin River Water Quality
 17 Improvement Project ("SJRIIP") to the Grassland Bypass Channel and the San Luis Drain ("Drain"), and
 18 subsequently discharging the polluted waste stream into Mud Slough, a water of the United States.

19 37. For decades now, Reclamation and the Authority (collectively, the "Operators") have been
 20 discharging water laden with pollutants harmful to human health and to the fragile ecosystems of Mud
 21 Slough, the San Joaquin River, and the Bay-Delta. The original GBP was permitted for just 5 years, as a
 22 short-term, stop-gap project. However, with extensions, it has now operated for 23 years – long past the
 23 time by which it was to be shuttered.

24 38. After preparation of a Final Environmental Impact Statement / Final Environmental Impact
 25 Report, the Operators signed a Use Agreement in 2001 allowing GBP operation from September 28,
 26 2001 through December 31, 2009, when it was to be terminated.

27 39. However, the GBP was not closed in 2009. Instead, that year the Operators prepared a Final
 28 Environmental Impact Statement / Final Environmental Impact Report ("2009 EIS/EIR") and in 2010

1 approved the current Use Agreement (2010 Use Agreement) allowing the continuation of the GBP from
2 2010 through December 31, 2019.

3 40. The ongoing discharges of pollutants from the GBP violate the Clean Water Act. Under
4 sections 301 and 402 of the CWA, an NPDES permit is required for those discharges. 33 U.S.C. §§
5 1311, 1342. California's Porter-Cologne Water Quality Control Act requires compliance with the CWA.
6 Water Code § 13377. In 1996, the Operators obtained an NPDES permit for the discharge of
7 groundwater from the Project. But in September 1996, that NPDES permit was rescinded.
8 Consequently, the current discharges are not authorized by any NPDES permit. Nonetheless, the
9 Authority approved the Project knowing that it collects polluted groundwater and discharges it into the
10 San Luis Drain, Mud Slough, and eventually into the San Joaquin River and the Bay-Delta without an
11 NPDES permit. The Authority's approval of the Project therefore violates the Clean Water Act.

12 41. On September 6, 2019 the Ninth Circuit Court of Appeals confirmed that "Congress
13 intended for discharges that include return flows from activities unrelated to crop production to be
14 excluded from the statutory exception, thus requiring an NPDES permit for such discharges." *PCFFA v.*
15 *Glaser*, 937 F.3d 1191, 1199 (9th Cir. 2019). The wastewaters discharged by the GBP through the San
16 Luis Drain are commingled and include contaminated water from land that is neither irrigated nor
17 farmed. Therefore, under this ruling, an NPDES permit is required for operation of the Drain. *Id.*

18 42. By approving an extension of the GBP Use Agreement allowing the continued discharge of
19 pollutants from the Drain into waters of the United States without the required NPDES permit, the
20 Authority is violating the CWA. The Authority's attempted end-run around the CWA – by claiming the
21 Drain is exempt from the NPDES permit requirement – was forcefully rejected by the Ninth Circuit in
22 *PCFFA v. Glaser*. 937 F.3d at 1199-1201.

23 43. The Authority's violation of the CWA is causing significant environmental harm.
24 Discharges by the GBP contain high levels of selenium. Selenium kills juvenile salmon and steelhead
25 and causes birth defects in the birds that nest and feed along the shorelines and in the wetlands affected
26 by the Project. According to recent monitoring reports, selenium levels in the San Joaquin River exceed
27 safe drinking water standards. Selenium pollution from the Drain is present throughout the Bay-Delta, a
28 vital estuarine system which, through the Central Valley Project and the State Water Project, serves as

1 the water supply for 20 million Californians.

2 44. Despite this serious pollution impact, the Operators have extended the operational life of the
3 GBP for *an additional 25 years*, until 2045, without first securing the NPDES permit that is required,
4 and remedying the pollution that the CWA prohibits.

5 45. Petitioners exhausted their administrative remedies by timely submitting detailed
6 comments objecting to the Project and its Addendum on September 13, 2019. Petitioners pointed out in
7 their comments that the Authority must comply with the CWA's requirement for an NPDES permit,
8 prepare an SEIR for the Project, comply with the Delta Reform Act, and protect public trust resources,
9 among other objections.

10 46. Despite these objections by Petitioners and others, on October 10, 2019 the Authority issued
11 a Notice of Determination ("NOD") certifying its Final Addendum and Initial Study and approving the
12 Project. The NOD was posted by the Governor's Office of Planning and Research on October 11, 2019.

13 **FIRST CAUSE OF ACTION**

14 **(Violation of CEQA)**

15 **(Alleged by All Petitioners Against All Respondents)**

16 47. The paragraphs set forth above and below are realleged and incorporated herein by
17 reference.

18 48. Petitioners bring this First Cause of Action for violations of CEQA pursuant to PRC
19 sections 21168 and 21168.5, on the grounds that the Authority committed a prejudicial abuse of
20 discretion by failing to proceed in the manner required by law in approving a deeply flawed Project
21 based on a legally inadequate Addendum.

22 49. The purpose of an addendum is to provide agencies and the public with information about
23 changes to a proposed project that will cause any "new significant environmental effects or a substantial
24 increase in the severity of previously identified significant effects," or result in changes to the feasibility
25 of any mitigation measures or alternatives, whether or not they were previously considered. Guidelines
26 §§ 15162(a), 15164(a). An addendum is not appropriate where, as here, "[s]ubstantial changes are
27 proposed in the project," "[s]ubstantial changes occur with respect to the circumstances under which the
28 project is undertaken," or "[n]ew information of substantial importance" shows a change in the project's

1 effects, mitigation measures, or alternatives such that new significant environmental effects or a
2 substantial increase in the severity of previously identified significant effects are now shown. Guidelines
3 § 15162(a).

4 50. The Addendum purports to assess the impacts of the Authority's proposed Long-Term
5 Storm Water Management Program ("Storm Water Program"). The Storm Water Program would add
6 approximately 200 acres of "storage basins," expand the Project's reuse area and otherwise modify the
7 operation of the Project. These changes will have significant impacts not previously analyzed, and
8 therefore require preparation of an SEIR.

9 51. There is a second reason an SEIR is required. There have been numerous changes in the
10 circumstances surrounding the Project, as the Authority admits. Addendum Appendix A 19. These
11 changes, along with the changes to the Project itself, have significant impacts not previously analyzed
12 that must be studied in an SEIR rather than an addendum.

13 52. There is a third reason an SEIR is required. New information of substantial importance has
14 come to light in the intervening years since the GBP was last approved in 2009, showing changes in the
15 Project's effects not previously analyzed that require analysis in an SEIR.

16 53. The Authority's certification of the Addendum instead of an SEIR, and approval of a 25-
17 year extension for the GBP Use Agreement based on the Addendum, violate CEQA. The Addendum is
18 inadequate, and an SEIR was required, for the reasons detailed below.

19 Surface Water, Groundwater, and Soils

20 **a. The Project Requires an NPDES Permit**

21 54. The Authority certified the Addendum and approved a 25-year extension of the GBP Use
22 Permit despite the fact that it is thereby violating the Clean Water Act by discharging polluted flows
23 from the GBP into waters of the United States without the required NPDES permit. This violation of the
24 CWA contravenes CEQA's requirement that the Authority must disclose whether the Project would
25 "[v]iolate any . . . waste discharge requirements." Guidelines Appendix G, Environmental Checklist
26 Form, Subdivision X ("HYDROLOGY AND WATER QUALITY") Question "a." CEQA requires that
27 this violation be addressed in an SEIR because it raises new information of substantial importance and
28 changes the circumstances surrounding the Project such that significant environmental effects not

1 previously analyzed are shown. Guidelines § 15162(a).

2 **b. Adding 200 Acres of Storage Basins Poses Significant New Impacts**

3 55. The Addendum states that the Storm Water Program's use of 200 acres of storage basins to
4 collect storm water for subsequent release will not significantly impact water quality. Addendum 3-4 to
5 3-5. The Addendum claims that, by impounding storm flows, and metering their release onto the reuse
6 area, contaminated discharges would be avoided or reduced to insignificance. *Id.* This assertion is based
7 on the assumption that storm water that would be collected in these storage basins from December to
8 May would not discharge pollutants such as selenium, boron, salt, and molybdenum to Mud Slough and
9 thence the San Joaquin River. Addendum 3-3. That premise is false. As the Authority admits, the
10 storage basins are unlined and will allow seepage of their contaminated water to the underlying and
11 surrounding groundwater. Addendum Appendix A 10. Furthermore, foreseeable weather conditions and
12 constraints on the SJRIP's efficacy and operational capacity may result in the discharge of untreated
13 water to the storage basins on the SJRIP, as further discussed below. The potential impacts of those
14 discharges must be analyzed in an SEIR.

15 **c. Shutting Down Sump Pumps During Wet Weather Creates Significant New Impacts**

16 56. In an attempt to reduce the volume of contaminated groundwater in its discharges, the
17 Storm Water Program calls for wastewater sump pumps to be turned off "prior to and during wet
18 weather flows." *Id.* But as the impounded storm water collects in these storage basins, it will add to the
19 contaminants in the already impaired groundwater and soils underlying and surrounding the basins,
20 exacerbating their contamination. Addendum Appendix A 10. Consequently, the impounded
21 wastewater will simply create additional saturated soils, ponds of contaminated water, and polluted run-
22 off, all of which will continue to enter the Drain by gravity flow and seepage, and ultimately discharge
23 into Mud Slough.

24 **d. Relocating Contaminated Sediment Did Not Eliminate the Problem**

25 57. The Authority claims it has removed from the Drain approximately 180,000 cubic yards –
26 so far – of contaminated sediment. But the question remains whether this contaminated sediment may
27 nonetheless find its way into the groundwater that drains into the San Luis Drain. Much of this
28 contaminated sediment was apparently relocated to old drains, or placed elsewhere in the reuse area. If

1 so, surface runoff and groundwater will continue to infiltrate this contaminated sediment, and remobilize
 2 these contaminants – including high levels of selenium and other pollutants – into the water table, and
 3 ultimately the San Luis Drain. This potential pathway of recontamination must be disclosed and its
 4 impacts and their mitigation must be addressed.

5 **e. Expanding the Reuse Area Does Not Solve the Contamination Problem**

6 58. The Storm Water Program would also expand the size of the reuse area. The Addendum
 7 states that the expansion is necessary because the existing reuse area cannot be used to store and treat the
 8 seleniferous water without dangerous ponding. Addendum 2-5. In other words, the reuse area is unable
 9 to serve the purpose for which it was ostensibly designed. Instead of reevaluating the wisdom of the
 10 system in light of its failure, the Authority is doubled-down on the Project by expanding its size. The
 11 Authority claims that because the expansion area “represent[s] a 9% increase” over the reuse area
 12 permitted in 2009, and that “crops grown and water management will be identical to the existing
 13 project,” no further analysis is needed. Addendum Appendix A 11. But this logic is fatally flawed. The
 14 SJRIP is broken. It cannot serve the purpose for which it is designed. This broken Project must be
 15 replaced with effective treatment, not expanded.

16 **f. The Addendum Relies on Obsolete and Inaccurate Modeling**

17 59. The Authority did not perform any new modeling of the water quality impacts associated
 18 with the Storm Water Program, including impacts resulting from the increase in the size of the reuse area
 19 or the use of the proposed new storage basins. Addendum 3-11. By relying on out-of-date modeling that
 20 does not accurately reflect the Storm Water Program’s impacts, or the changed conditions at the reuse
 21 area, the Authority has precluded informed decisionmaking and therefore failed to comply with CEQA.
 22 Under CEQA Guidelines section 15162, these new and substantially increased impacts must be
 23 thoroughly studied in an SEIR.

24 **Biology**

25 **a. Use of Storage Basins Exposes Waterfowl to Elevated Selenium**

26 60. The changes contemplated in the Addendum will substantially increase the severity of
 27 previously identified biological impacts and cause significant new biological impacts that were not
 28 considered in the 2009 FEIS/FEIR. For example, the Addendum proposes “to accumulate storm water in

1 the [storage basins in the GDA] as needed to reduce peak flows during high rainfall events . . . for
 2 subsequent release of the storm water through the Drain or to the reuse area.” Addendum 2-3. As the
 3 Addendum acknowledges, use of storage basins in the GDA has the potential to expose waterfowl to
 4 water with elevated selenium levels if the basins cannot promptly be drained. Addendum 2-3. But
 5 nothing in the Addendum, 2009 FEIS/FEIR, or the Initial Study indicates that the basins will be
 6 promptly drained, or that these impacts will be otherwise mitigated to insignificance. Rather, the
 7 Authority ignores the Project’s impacts on the “several avian species . . . observed on the existing reuse
 8 area” because the “observed densities of birds” are low.

9 **b. Reliance on the Ineffectual SJRIP Is Unavailing**

10 61. The Addendum claims that “[w]ater in the basins would be distributed to the SJRIP to meet
 11 irrigation demand as soon as practical,” but “as soon as practical” does not ensure that the basins will be
 12 “promptly drained” to protect wildlife. Addendum 2-3. In fact, the Authority will only deviate from its
 13 primary goal of distributing the water “as soon as practical” “[i]n rare cases . . . to prevent evapo-
 14 concentration if there is not sufficient reuse capacity to drain the basins.” Addendum 2-3 to 2-4. The
 15 only assurance the Addendum provides is that the basins would be emptied by late May. Addendum 2-4.
 16 Aside from a late May deadline, the Addendum fails to provide any guidelines or criteria for when the
 17 basins will be drained, nor does it even consider what actions and facilities would be needed to promptly
 18 drain the basins to protect wildlife.

19 **c. Proposed Mitigations for Irrigation Ditches Are Ineffectual**

20 62. The Addendum and Initial Study argue that mitigation measures designed to limit the
 21 impacts of irrigation ditches in the 2009 EIS/EIR will help “avoid impacts to wildlife” from these storage
 22 basins, but the effectiveness of the mitigations is doubtful and moreover, they will have their own
 23 impacts that must be considered in an SEIR. Addendum 2-3; Initial Study 2-14 to 2-16. The 2009
 24 EIS/EIR proposed mitigations to make irrigation ditches less attractive and to haze birds to limit nesting
 25 and foraging in those irrigation ditches. Addendum 3-6 to 3-7. The majority of the measures designed
 26 to make irrigation ditches less attractive are inapplicable to the storage basins, both because the physical
 27 structures are different and because the storage basins already exist, limiting the potential to incorporate
 28 mitigations. Addendum Appendix A 9 (admitting that measures are more difficult to incorporate into

1 already existing features). And hazing has significant impacts because it displaces wildlife from its
 2 foraging, breeding and nesting habitat. Those impacts must be examined in an SEIR. CEQA Guidelines
 3 § 15162(a).

4 //

5 **d. Expansion of the SJRIP Would Increase Ponding of Seleniferous Water**

6 63. The Project includes a 1,450-acre expansion of the existing reuse facility – the SJRIP – to
 7 7,550 acres. The 2009 EIS/EIR analyzed a 6,100 acre reuse facility, and the proposed expansion “is an
 8 additional 650 acres over the maximum size anticipated in the 2009 Final EIS/EIR.” Addendum 2-5;
 9 2009 EIS/EIR 2-2. While the “additional acreage would be managed in the same manner as the existing
 10 acreage with the same biological monitoring requirements established by the U.S. Fish and Wildlife
 11 Service (USFWS) in their Biological Opinion,” that does not negate the significant new and increased
 12 impacts that this substantial change will have on the surrounding environment. Addendum 2-5; CEQA
 13 Guidelines § 15162(a). As the Addendum admits, “[t]he primary environmental concern is an increased
 14 potential for ponding of seleniferous water within the fields of the SJRIP, which could be an attractive
 15 nuisance to wildlife, particularly birds.” Addendum 2-5. This impact requires examination in an SEIR.

16 **e. Ponding in the Past Has Poisoned Birds**

17 64. The Project’s increased ponding will likely poison birds. In “2003, a pasture at the existing
 18 reuse area site attracted waterfowl when it was inadvertently flooded. This flooded area created ideal
 19 ecological conditions for shorebird foraging and nesting and thus, a number of pairs responded
 20 opportunistically and bred in the field.” Addendum 3-7. But as a consequence, “[r]ecurvirostrid [i.e.,
 21 birds of the family *recurvirostridae*] eggs collected near the pasture *had highly elevated [selenium]*
 22 *concentrations.*” *Id.* (emphasis added). But the Addendum dismisses this concern, claiming that “other
 23 impacts would be created if the area is not enlarged to handle agricultural drainage.” Addendum 2-5;
 24 Addendum Appendix A 9. But it is a violation of CEQA to ignore a significant impact on the grounds
 25 the effects of an alternative might be greater. The deliberate exposure of waterfowl to these poisonous
 26 waters is a significant impact that requires analysis in an SEIR. Creating this hazard is also a crime
 27 forbidden by the Migratory Bird Treaty Act, 16 U.S.C. section 703. An SEIR is needed both to assess
 28 the Project’s impacts on wildlife, and to determine what these “other” undisclosed impacts may be, and

1 thereby allow the public and decisionmakers to weigh them and make an informed decision.

2 **f. Reliance on Ineffective Mitigation Measures from 2009 EIS/EIR**

3 65. The Addendum and Initial Study rely on ineffective mitigation measures from the 2009
 4 EIS/EIR in an ill-advised attempt to reduce these new significant and substantially increased impacts.
 5 Supposedly, “[m]itigation contained in the Grassland Bypass Project Final EIS/EIR for the existing reuse
 6 facility would apply to this area also. This mitigation includes a contingency plan in the event of
 7 inadvertent flooding in the reuse area due to breakage of a water supply canal or delivery facility.”
 8 Addendum 2-5; Initial Study 1-11. But this one-page so-called contingency “plan” is vague and fails to
 9 provide any enforceable guidelines. It recommends that “ponded water . . . be eliminated through the
 10 discharge of the water into a tail-water return system *or* by pumping the water into one of the supply
 11 channels in the project *or* a tail-water return system” within 24 hours. Initial Study, Appendix D, D-2
 12 (emphasis added). But this page never explains why, when or how to utilize any of the options
 13 presented. Nor does it enforce the 24-hour ponding elimination requirement. Instead, this page defers
 14 mitigation for ponding that occurs for more than 24 hours, stating that “an event-specific monitoring
 15 plan will be developed to monitor the impacts on bird species resulting from exposure to ponded water.”
 16 Initial Study, Appendix D, D-2. In other words, the “plan” is to make it up as you go. That approach is
 17 the exact opposite of the searching examination and public review of a project’s impacts *before project*
 18 *approval* that CEQA demands.

19 **g. Reliance on Vague and Unenforceable Mitigation Measures**

20 66. While acknowledging that the SJRIP field will be increased in size, that field flooding has
 21 occurred previously, and that the flooded field created “ideal ecological conditions for shorebird foraging
 22 and nesting, and thus, a number of pairs responded opportunistically and bred in the [contaminated]
 23 field,” the Addendum simultaneously dismisses this concern. Addendum 3-7. Instead, the Authority
 24 claims that a vague and unenforceable mitigation measure that was never analyzed with regard to a reuse
 25 area of this size is sufficient. But it is not. An SEIR is required to analyze the impacts of the proposed
 26 Project. CEQA Guidelines § 15162.

27 67. For the foregoing reasons, the Authority’s Addendum violates CEQA. The Authority must
 28 prepare an SEIR to consider the impacts of the proposed Project, including the impacts to surface water,

1 groundwater, soil, and biology.

2
3 **SECOND CAUSE OF ACTION**

4 **(Violation of the Delta Reform Act)**

5 **(Alleged by All Petitioners Against All Respondents)**

6 68. The paragraphs set forth above and below are realleged and incorporated herein by
7 reference.

8 69. The Delta Reform Act requires any state agency “that proposes to undertake a covered
9 action” to “prepare a written certification of consistency with detailed findings as to whether the covered
10 action is consistent with the Delta Plan,” and submit the written findings to the Delta Stewardship
11 Council. Water Code § 85225. It defines “[c]overed action” as a “plan, program, or project” as defined
12 by Public Resources Code section 21065, that:

13 (1) Will occur, in whole or in part, within the boundaries of the Delta or Suisun Marsh.

14 (2) Will be carried out, approved, or funded by the state or a local public agency.

15 (3) Is covered by one or more provisions of the Delta Plan.

16 (4) Will have a significant impact on achievement of one or both of the coequal goals

17 Water Code § 85057.5(a).

18 70. The Delta Reform Act’s coequal goals are “providing a more reliable water supply for
19 California and protecting, restoring, and enhancing the Delta ecosystem. The coequal goals shall be
20 achieved in a manner that protects and enhances the unique cultural, recreational, natural resource, and
21 agricultural values of the Delta as an evolving place.” Water Code § 85054.

22 71. The Project discharges pollutants to the Delta that harm its fish and wildlife and therefore
23 will have a significant impact on achievement of the Delta Reform Act’s coequal goals.

24 72. The Authority failed to make the consistency determination required by the Delta Reform
25 Act before approving the Project. It could not make this required determination because the Project is
26 not consistent with the Delta Plan or the coequal goals of the Delta Reform Act. The Delta Plan itself
27 acknowledges that the existing 5 µg/L selenium objective for chronic exposure “may not be sufficient”
28 for aquatic organisms and fish. Delta Plan, Chapter 6, p. 228. The Delta Plan recommends that projects

maintain water quality “at a level that supports, enhances, and protects” the beneficial uses identified in the Basin Plan. WQ R1. The Project fails to do so.

73. As formulated, the Project’s WDRs permit harmful discharges that degrade the quality of the Delta ecosystem, contrary to the Delta Reform Act and the Delta Plan’s requirements that projects restore, protect, and enhance the Delta ecosystem. Water Code §§ 85054, 85066; Delta Plan Chapters 4 (Protect, Restore and Enhance the Delta Ecosystem) and 6 (Water Quality).

74. For the foregoing reasons, the Project is neither consistent with the Delta Plan nor compliant with the coequal goal of “protecting, restoring, and enhancing the Delta ecosystem.” Water Code § 85054. Therefore it violates the Delta Reform Act.

THIRD CAUSE OF ACTION

(Violation of the Public Trust Doctrine)

(Alleged by All Petitioners Against All Respondents)

75. The paragraphs set forth above and below are realleged and incorporated herein by reference.

76. Water Code section 85023 states, “the longstanding constitutional principle of reasonable use and the Public Trust Doctrine shall be the foundation of state water management policy and are particularly important and applicable to the Delta.”

77. In *United States v. State Water Resources Control Board*, the court noted that the Public Trust Doctrine mandates “that the state as trustee of the public trust retains supervisory control over the state’s waters such that no party has a vested right to appropriate water in a manner harmful to the interests protected by the public trust.” *Id.* at 149, citing *National Audubon Society v. Superior Court*, 33 Cal.3d at 445. The court held that the public trust doctrine necessarily requires agencies to “consider water quality for the protection of beneficial uses” when determining whether or not to approve a project. *Id.* at 150-151.

78. “Public trust easements are traditionally defined in terms of navigation, commerce and fisheries. They have been held to include the right to fish, hunt, bathe, swim, to use for boating and general recreation purposes the navigable waters of the state, and to use the bottom of the navigable waters for anchoring, standing, or other purposes.” *Marks v. Whitney*, 6 Cal.3d at 259. For nearly 50

1 years it has been settled law in California that public trust values also “encompass[] . . . the preservation
 2 of those lands in their natural state, so that they may serve as ecological units for scientific study, as open
 3 space, and as environments which provide food and habitat for birds and marine life, and which
 4 favorably affect the scenery and climate of the area.” *Id.* at 259-260.

5 79. The Public Trust Doctrine “imposes an obligation on the state trustee [here, the Authority]
 6 ‘to protect the people’s common heritage of streams, lakes, marshlands and tidelands, surrendering that
 7 right of protection only in rare cases when the abandonment of that right is consistent with the purposes
 8 of the trust.’” *Baykeeper II*, 29 Cal.App.5th at 569; *Baykeeper I*, 242 Cal.App.4th at 234; *National*
 9 *Audubon*, 33 Cal.3d at 441. The Delta and its tributaries are public trust resources that must be
 10 protected. The Public Trust Doctrine “impose[s] an affirmative duty” on the Authority “to take the
 11 public trust into account” before authorizing the continued degradation of already imperiled waterways.
 12 *Baykeeper II*, 29 Cal.App.5th at 570-571. Although “the state trustee has broad discretion . . . to
 13 promote [one public trust use] over other legitimate trust uses,” it does not have discretion to promote
 14 non-public trust uses over “legitimate trust uses.” *Id.* at 577.

15 80. But the Authority did exactly that here. It approved the discharge of polluted flows – a non-
 16 public trust use – over the protection of public trust resources. These flows degrade the waters of Mud
 17 Slough, the San Joaquin River, and the Delta, harming the individuals and species that rely on them.

18 81. The Project will harm public trust resources, including habitat necessary for fish and
 19 wildlife, and clean water essential for recreation, because the Project directly contributes to the pollution
 20 and degradation of Mud Slough, the San Joaquin River, and the Delta. The Project impermissibly
 21 promotes a non-public trust use at the expense (indeed, potential extirpation) of the Delta’s imperiled
 22 fish and wildlife and other public trust resources.

23 82. By approving the Project without adequately analyzing potential alternatives as required by
 24 CEQA and the Public Trust Doctrine, the Authority abdicated its affirmative statutory and constitutional
 25 “duties to take the trust into account and protect public trust uses whenever feasible,” and impermissibly
 26 promoted a non-public trust use at the expense of public trust resources. *Baykeeper II*, 29 Cal.App.5th at
 27 571, 577.

28 83. For the foregoing reasons, the Authority’s approval of the Project violates the Public Trust

1 Doctrine.

2 **FOURTH CAUSE OF ACTION**

3 **(Writ of Mandate, Declaratory and Injunctive Relief to Set Aside**

4 **Project Approvals as Contrary to CCP §§ 1085 and 1094.5)**

5 **(Alleged by All Petitioners Against All Respondents)**

6 84. The paragraphs set forth above and below are realleged and incorporated herein by
7 reference.

8 85. The Authority proceeded in excess of its jurisdiction and abused its discretion in purporting
9 to approve the Project and certify the Addendum thereon, because such approvals violate CCP sections
10 1085 and 1094.5 in the following respects, among others:

- 11 a. such approvals were not granted in accordance with the procedures required by law;
12 b. such approvals were not based on the findings required by law; and
13 c. such approvals were not based on, or were contrary to, the evidence in the record
14 before the Authority.

15 86. The Authority failed to proceed in the manner required by law in the following respects,
16 among others:

- 17 a. The Authority violated CEQA as alleged hereinabove;
18 b. The Authority violated the Delta Reform Act as alleged hereinabove; and
19 c. The Authority violated the Public Trust Doctrine as alleged hereinabove.
20 d. The Authority violated the Clean Water Act and the Porter-Cologne Water Quality
21 Control Act by not securing the NPDES permit they require as alleged hereinabove.

22 87. The Authority's actions in approving the Project without complying with the procedures
23 required by CCP sections 1085 and 1094.5 exceeded the Authority's jurisdiction and constitute a
24 prejudicial abuse of discretion, and therefore are invalid and must be set aside.

25 **PRAYER FOR RELIEF**

26 WHEREFORE, petitioners pray for relief as follows:

- 27 1. For interlocutory and permanent injunctive relief restraining the Authority from taking any
28 action to carry out the Project pending, and following, the hearing of this matter;

2. For a peremptory writ of mandate directing the Authority to set aside and vacate its approval of the Project, and certification of its Addendum;

3. For declaratory relief declaring the Project and its Addendum to be unlawful;

4. For a peremptory writ of mandate directing the Authority to suspend all activity implementing the Project that could result in any change or alteration in the physical environment until it has taken all actions necessary to bring its approval of the Project and its Addendum into compliance with CEQA, the Delta Reform Act, the Public Trust Doctrine, the Code of Civil Procedure, the Clean Water Act and the Porter-Cologne Water Quality Act.

5. For attorneys' fees under Code of Civil Procedure section 1021.5;

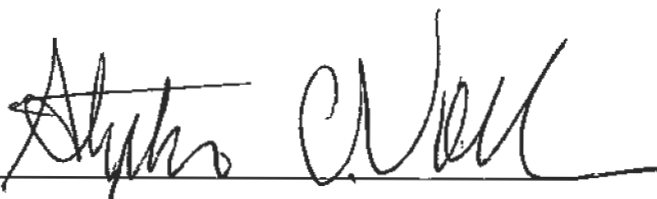
6. For costs incurred in this action; and

7. For such other equitable or legal relief as the Court may deem just and proper.

Dated: November 12, 2019

Respectfully submitted,

LAW OFFICES OF STEPHAN C. VOLKER

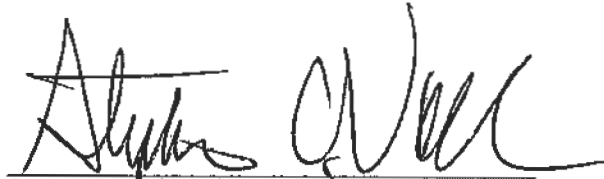


By: STEPHAN C. VOLKER
Attorney for Petitioners and Plaintiffs
NORTH COAST RIVERS ALLIANCE, SAN FRANCISCO
CRAB BOAT OWNERS ASSOCIATION, CALIFORNIA
SPORTFISHING PROTECTION ALLIANCE, PACIFIC
COAST FEDERATION OF FISHERMEN'S
ASSOCIATIONS, and INSTITUTE FOR FISHERIES
RESOURCES

VERIFICATION

I, Stephan C. Volker, am the attorney for petitioners/plaintiffs in this action. I make this verification on behalf of the petitioners/plaintiffs because such parties and their representatives are absent from the county in which my office is located. I have read the foregoing Verified Petition for Writ of Mandate and Complaint for Declaratory and Injunctive Relief and Attorneys' Fees and know its contents. The facts therein alleged are true and correct to the best of my knowledge and belief, and are based on documents within the public records underlying the approvals herein challenged.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, and that this Verification was executed in Berkeley, California on November 12, 2019.



STEPHAN C. VOLKER

EXHIBIT

4

Stephan C. Volker
Alexis E. Krieg
Stephanie L. Clarke
Jamey M.B. Volker (Of Counsel)

Law Offices of
Stephan C. Volker
1633 University Avenue
Berkeley, California 94703
Tel: (510) 496-0600 ♦ Fax: (510) 845-1255
svolker@volkerlaw.com

10.652.01

December 20, 2019

via email

reverest@usbr.gov

Ryan Everest,
Bureau of Reclamation,
2800 Cottage Way, MP-440,
Sacramento, CA 95825-1898

Re: Transfer of the Operation, Maintenance and Replacement and Certain Financial and Administrative Activities Related to the San Luis and Delta-Mendota Canals, C.W. "Bill" Jones Pumping Plant, Delta-Mendota Canal/California Aqueduct Intertie Pumping Plant, O'Neill Pumping/Generating Plant, San Luis Drain and Associated Works

Mr. Everest:

On behalf of the Winnemem Wintu Tribe, North Coast Rivers Alliance, Pacific Coast Federation of Fishermen's Associations, Institute for Fisheries Resources, California Sportfishing Protection Alliance, and San Francisco Crab Boat Owners Association, Inc., we submit the following comments regarding the Bureau of Reclamation's ("Bureau's") draft agreement with the San Luis & Delta-Mendota Water Authority ("SLDMWA") to renew SLDMWA's contract to operate and maintain certain Central Valley Project facilities ("Project Works") and transfer the administrative and financial responsibility to fund SLDMWA's operation, maintenance and replacement ("OM&R") of those Project works for the proposed 35-year term ("Draft Agreement").

I. SLDMWA Has Not Demonstrated the Ability to Operate and Maintain the Project Works in Compliance with Applicable Law Including the Clean Water Act

The Draft Agreement tasks SLDMWA with the "complete operation and maintenance" of the "Delta-Mendota Canal and related in-line control facilities; wasteways, laterals, holding reservoirs, turnouts and measuring devices, associated water level control devices and water level recording instruments; appurtenant equipment, structures and maintenance buildings; the Jones Pumping Plant; the O'Neill Pumping/Generating Plant; the Delta-Mendota Canal/California

Aqueduct Intertie Pumping Plant; the San Luis Drain; the Kesterson Reservoir; and such other facilities as the Parties may agree by modification of Exhibit A, without amending this Agreement.” Draft Agreement Article 1.(d) (p.4:84-85) (first quote, defining OM&R), Article 1.(i) (p. 6:122-128) (second quote, defining “Project Works”). SLDMWA will be required to “perform[], fund[] and financ[e] such repairs and replacements as are normally considered part of annual operation and maintenance functions . . . in accordance with Federal law and other regulations, policies, guidelines or instructions adopted thereunder,” Draft Agreement Article 1.(d) (pp.4:85-5:90). It also allows SLDMWA to “include Capital Improvements . . . which [SLDMWA] chooses to accomplish and finance.” Draft Agreement Article 1.(d) (p. 5:96-98).

While the title to Project Works remains with the Bureau, the Draft Agreement shifts all responsibility to SLDMWA to maintain, operate, and repair the Project Works. SLDMWA is, by the terms of the Contract, required to maintain them “in such a manner that [they] shall remain in good and efficient condition for the storage, diversion and carriage of water.” Draft Agreement Article 3.(a) (p. 9:203-204) 6.(a) (p. 12:284-286).

The Draft Agreement states that SLDMWA “has demonstrated its ability to operate and maintain such facilities to the satisfaction of the [authorized representative of the Department of Interior] and in a manner which best and most economically serves the water users relying on those facilities” Draft Agreement Recital h. (p. 3:49-51). All the same, SLDMWA’s past actions and inactions demonstrate that its performance has been deficient.

SLDMWA and the Bureau currently discharge pollutants into waters of the United States through the San Luis Drain, a point source. The San Luis Drain collects and commingles polluted water from a variety of sources, both ground and surface, and conveys this pollution into Mud Slough and thence the San Joaquin River and the Delta. Its discharge of pollutants into Mud Slough, a water of the United States, without a National Pollutant Discharge Elimination System (“NPDES”) permit violates the Clean Water Act, 33 U.S.C. section 1251, *et seq.* (“CWA”). See *Pacific Coast Federation of Fishermen’s Associations v. Glaser*, 937 F.3d 1191 (9th Cir. 2019) (as modified on denial of rehearing Dec. 20, 2019) (modified slip opinion attached as Exhibit 1.)

The Ninth Circuit held that “Congress intended for discharges that include return flows from activities unrelated to crop production to be excluded from the statutory exception, thus requiring an NPDES permit for such discharges.” *PCFFA v. Glaser*, Slip Op. at 16. The wastewaters discharged through the San Luis Drain, are commingled and include both agricultural return flows and non-agriculture wastewater. Therefore, an NPDES permit is required for operation of the San Luis Drain.

The Court correctly ruled that “the defendant carries the burden to demonstrate the applicability of a statutory exception to the CWA” and that neither SLDMWA nor the Bureau had presented such evidence. *Id.*, at 11. Indeed, they could not carry that burden because there is overwhelming evidence to the contrary that the flows through the San Luis Drain are not

composed “entirely” of irrigated agricultural return flows. As the plaintiffs properly alleged, “discharges from highways, residences, seepage into the [San Luis Drain] from adjacent [unfarmed] lands, and sediments from within the [San Luis Drain]” commingle with the irrigated agriculture return flows. *Id.*, at 18. Because the polluted waters that discharge from the San Luis Drain are commingled flows, the San Luis Drain cannot lawfully operate without an NPDES permit.

Thus, SLDMWA has not demonstrated that it has the ability to operate and maintain the Project Works in a manner that complies with applicable law. While the Draft Agreement includes terms requiring compliance with the Clean Water Act, and preventing contamination of “Project waters,” the terms do not supersede applicable law. Draft Agreement Article 19.(a)-(h) (pp. 32:796-33:837), Article 23.(a)-b) (pp. 34:852-35:898). SLDMWA’s past and ongoing operation of the San Luis Drain discharges pollutants without the required NPDES permit. Therefore it should not be entrusted with responsibility to operate, maintain, and replace the Project Works for the next 35 years.

II. Terms of the Draft Agreement Run Counter to the CVPIA

In 1992 Congress enacted the Central Valley Project Improvement Act, Public Law No. 102-575, 108 Stat. 4600 (“CVPIA”), to reduce the adverse environmental impacts of Central Valley Project operations. CVPIA §§ 3402(a)-(b), 3406(b). The Draft Agreement runs counter to the CVPIA’s goals for the protection of fish and wildlife.

CVPIA section 3406 codified a fish-doubling standard. CVPIA Section 3406(b)(1) (“natural production of anadromous fish in the Central Valley rivers and streams will be sustainable, on a long-term basis, at levels not less than twice the average levels attained during the period of 1967-1991” by 2002). This goal has not been, and *cannot* now be, achieved by the 2002 deadline. The 2001 Final Restoration Plan for the Anadromous Fish Restoration Program (“AFRP Plan”) adopted by the National Marine Fisheries Service established objectives that were supposed to meet the fish doubling goal, including “improve habitat for all life stages of anadromous fish through provision of [suitable] flows . . . and improved physical habitat,” “improve survival rates by reducing or eliminating entrainment of juveniles at diversions,” and “improve the opportunity for adult fish to reach their spawning habitats in a timely fashion” among others. AFRP Plan, p. 5 (capitalization altered).¹

The Bureau adopted a Final Programmatic Environmental Impact Statement for Implementation of the CVPIA (“CVPIA PEIS”) in 1999. In it, the Bureau acknowledged that its operation of the Central Valley Project had impaired fisheries through the suppression of storm

¹ Available at:
www.fws.gov/cno/fisheries/CAMP/Documents/Final_Restoration_Plan_for_the_AFRP.pdf (last visited December 20, 2019).

flows, dams, reversed flow on the San Joaquin River, the loss of riparian vegetation through the levee system, and other habitat degradation. However, neither the AFRP Plan nor the CVPIA PEIS lead to compliance with the fish-doubling goal, and the Bureau has continued to operate the Central Valley Project in a manner that prioritizes water deliveries over – and to the detriment of – environmental needs.

Indeed, in the over-quarter century since Congress passed the CVPIA, populations of fish species in the Bay Delta have steeply declined toward extinction. Indeed, endangered winter-run Chinook salmon, threatened spring-run Chinook salmon, threatened Central Valley steelhead, threatened green sturgeon, and threatened delta smelt have all faced an uphill battle for survival in the face of increased salinity, sedimentation, rising temperature, and other harmful reductions in water quality and flow. These trends are not limited to fish species listed as threatened or endangered under the Endangered Species Act. Fall-run and late fall-run Chinook salmon – the remaining commercially fished Chinook – have also faced population declines. When there are insufficient returning fall-run and late-fall run Chinook, the commercial and recreational Chinook salmon fisheries have been shut down as emergency measures to protect the species. The adverse conditions causing these population declines can be attributed to Central Valley Project operations, including the Project Works that are the subject on the Draft Agreement.

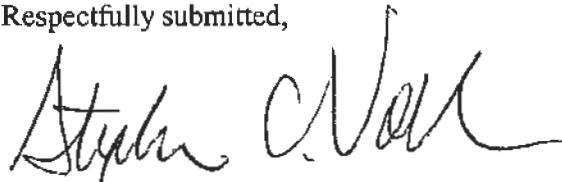
The CVPIA prevented the Bureau from entering into “any new short-term, temporary, or long-term contracts or agreements for water supply from the Central Valley Project for any purpose other than fish and wildlife” until “[t]he provisions of [CVPIA] subsections 3406(b)-(d) are met.” CVPIA § 3404(a). The Draft Agreement would transfer significant water delivery authority to SLDMWA, allowing it to deliver water to existing contractors and other parties. Draft Agreement Article 9 (pp. 15:355-16:383). Yet the Draft Agreement contains no explicit requirements that SLDMWA administer contracts or deliver water in compliance with the terms of the CVPIA, as the Bureau would be required to do under CVPIA section 3404(b)(2.) Draft Agreement 9 (pp. 15:355-16:383). It likewise contains no explicit provisions preventing “new obligations” to convey and distribute water until the CVPIA’s fish and wildlife provisions are satisfied, as would be required before the Bureau enters into a new contract for Central Valley Project water. CVPIA § 3404(a).

The Draft Agreement also fails to appropriately protect water deliveries to wildlife refuges, as it authorizes SLDMWA to “discontinue delivery and conveyance of water” when an account is delinquent. Draft Agreement Article 12.(d) (pp. 22:530-535). The Draft Agreement acknowledges that the Bureau is the party “required to pay [SLDMWA] the amounts described in Article 12 in connection with delivery” of water to “wildlife refuges and wildlife management areas.” Draft Agreement Article 1.(f) (pp. 5:111-6:115). Yet the Draft Agreement does not contain appropriate protective language to prevent SLDMWA from terminating water deliveries in the event that the Bureau fails to meet its obligations. Draft Agreement Article 12 (pp. 18:117-25:614). The Bureau is required to deliver water to these refuges and cannot avoid doing so by failing to pay for deliveries through this contract. CVPIA § 3406(d).

The CVPIA also requires the Bureau to “operate the Central Valley Project to meet all obligations under State and Federal law, including but not limited to ... all decisions of the California State Water Resources Control Board establishing conditions on applicable licenses and permits for the project.” CVPIA § 3406(b). Yet the Draft Agreement fails to provide that SLDMWA operate the Project Works to meet the requirements of CVPIA section 3406(b). Past practice shows that the Bureau and SLDMWA will not do so, as the Project Works have been operated without compliance with the applicable Water Quality Control Plans.

For the reasons stated, the Draft Agreement improperly delegates the Bureau’s authority and responsibility to SLDMWA. SLDMWA, in turn, has demonstrated that its operation of the Project Works will be done to benefit its agricultural water users at the expense of the environment. The Bureau must ensure that the Project Works are operated in compliance with the Clean Water Act, the CVPIA, and other applicable environmental laws, through a revised Draft Agreement or through better oversight and direct action.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Stephan C. Volker". The signature is fluid and cursive, with the first name "Stephan" and last name "Volker" clearly distinguishable.

Stephan C. Volker

Attorney for Winnemem Wintu Tribe, North Coast Rivers Alliance, Pacific Coast Federation of Fishermen’s Associations, Institute for Fisheries Resources, California Sportfishing Protection Alliance, and San Francisco Crab Boat Owners Association, Inc.,

Bureau of Reclamation
December 20, 2019
Page 6

Enclosures

LIST OF EXHIBITS

1. *Pacific Coast Federation of Fishermen's Associations v. Glaser*, 937 F.3d 1191 (9th Cir. 2019) (as modified on denial of rehearing Dec. 20, 2019)

EXHIBIT

1

FOR PUBLICATION

**UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT**

PACIFIC COAST FEDERATION OF
FISHERMEN'S ASSOCIATIONS;
CALIFORNIA SPORTFISHING
PROTECTION ALLIANCE; FRIENDS OF
THE RIVER; SAN FRANCISCO CRAB
BOAT OWNERS ASSOCIATION, INC.;
THE INSTITUTE FOR FISHERIES
RESOURCES; FELIX SMITH,
Plaintiffs-Appellants,

v.

DONALD R. GLASER, Regional
Director of the U.S. Bureau of
Reclamation; UNITED STATES
BUREAU OF RECLAMATION; SAN LUIS
& DELTA MENDOTA WATER
AUTHORITY,
Defendants-Appellees.

No. 17-17130

D.C. No.
2:11-cv-02980-
KJM-CKD

ORDER AND
AMENDED
OPINION

Appeal from the United States District Court
for the Eastern District of California
Kimberly J. Mueller, District Judge, Presiding

Argued and Submitted June 10, 2019
San Francisco, California

Filed September 6, 2019
Amended December 20, 2019

Before: MARY M. SCHROEDER and MILAN D. SMITH, JR., Circuit Judges, and DOUGLAS L. RAYES,* District Judge.

Opinion by Judge Milan D. Smith, Jr.

SUMMARY**

Clean Water Act

The panel filed an amended opinion reversing the district court's judgment in an action alleging that the drainage system managed by the U.S. Bureau of Reclamation and the San Luis & Delta Mendota Water Authority discharged pollutants into surrounding waters in violation of the Clean Water Act, 33 U.S.C. §§ 1251-1387; and denied petitions for panel rehearing.

The Central Valley Project is a federal water management project. The Grasslands Bypass Project, jointly administered by the defendants, is a tile drainage system that consists of a network of perforated drain laterals underlying farmlands in California's Central Valley that catch irrigated water and direct it to surrounding waters.

The Clean Water Act generally requires that government agencies obtain a National Pollutant Discharge Elimination

* The Honorable Douglas L. Rayes, United States District Judge for the District of Arizona, sitting by designation.

** This summary constitutes no part of the opinion of the court. It has been prepared by court staff for the convenience of the reader.

System permit before discharging pollutants from any point source into navigable waters of the United States. There is an exception to that permitting requirement “for discharges composed entirely of return flows from irrigated agriculture.” 33 U.S.C. § 1342(l)(1).

The panel held that the district court properly interpreted “discharges . . . from irrigated agriculture,” as used in § 1342(l)(1), to mean discharges from activities related to crop production. The panel held that the district court ought to have begun its analysis with the statutory text, but its reliance on legislative history to construe this portion of the statute was not erroneous. The panel further held, however, that the district court erred by interpreting “entirely” to mean “majority,” and by placing the burden on plaintiffs to demonstrate that the discharges were not covered under § 1342(l)(1), rather than placing the burden on defendants to demonstrate that the discharges were covered under § 1342(l)(1). The panel concluded that the district court’s erroneous interpretation of the word “entirety” was the but-for-cause dismissal of plaintiffs’ Vega claim (concerning groundwater discharges from lands underlying a solar project), and the panel, therefore reversed the district court’s dismissal of that claim. The panel further concluded that the district court’s dismissal of plaintiffs’ other claims was also erroneous, reversed the dismissal of those claims, and remanded for the district court to reconsider them under the correct interpretation of § 1342(l)(1).

The panel held that the district court erred by striking plaintiffs’ seepage and sediment theories of liability from plaintiffs’ motion for summary judgment because the first amended complaint encompassed those claims.

COUNSEL

Stephan C. Volker (argued), Alexis E. Krieg, Stephanie L. Clarke, and Jamey M.B. Volker, Law Offices of Stephan C. Volker, Berkeley, California, for Plaintiffs-Appellants.

Brian C. Toth (argued) and Martin F. McDermott, Attorneys; Eric Grant, Deputy Assistant Attorney General; Jeffrey H. Wood, Acting Assistant Attorney General; United States Department of Justice, Environment & Natural Resources Division, Washington, D.C.; Amy L. Aufdemberge, Office of the Solicitor, Department of the Interior, Washington, D.C., for Defendants-Appellees Donald R. Glaser and United States Bureau of Reclamation. Eric J. Buescher (argued), and Joseph W. Cotchett, Cotchett Pitre & McCarthy LLP, Burlingame, California; Diane V. Rathmann, Linneman Law LLP, Dos Palos, California; for Defendant-Appellee San Luis & Delta Mendota Water Authority.

Ellen L. Wehr, Grassland Water District, Los Banos, California, for Amicus Curiae Grassland Water District.

ORDER

The opinion filed on September 6, 2019, and reported at 937 F.3d 1191 is hereby amended as follows:

At 937 F.3d at 1196, <underlying a solar product> is replaced with <underlying a solar project>.

At 937 F.3d at 1200, <which both parties now concede was erroneous> is replaced with <which Defendants now concede was erroneous>. <Accordingly, the lack of

evidence demonstrating that the discharges stemmed from activities unrelated to crop production should not have been fatal to Plaintiffs.> is replaced with <Accordingly, even if there were a lack of evidence demonstrating that the discharges stemmed from activities unrelated to crop production, it should not have been fatal to Plaintiffs.>. Additionally, <But if a “the complaint . . .> is replaced with <But if “the complaint . . .>.

A clean copy of the amended opinion is attached to this order.

With the foregoing amendments, the pending petitions for panel rehearing are DENIED. Dkt. Nos. 57, 62. The Grassland Water District’s motion to file an amicus curiae brief is GRANTED. Dkt. 59. No further petitions for panel rehearing or rehearing en banc will be entertained.

OPINION

M. SMITH, Circuit Judge:

California’s Central Valley features some of the most fertile agricultural land in the United States, but it typically receives less rainfall than necessary to cultivate the crops grown in the Valley. To help address this problem, the federal government has constructed and managed several irrigation and drainage projects.

Plaintiffs, a group of commercial fishermen, recreationists, biologists, and conservation organizations, sued Defendants Donald Glaser, the United States Bureau of Reclamation, and the San Luis & Delta Mendota Water Authority, alleging that the drainage system managed by Defendants discharges pollutants into surrounding waters, in

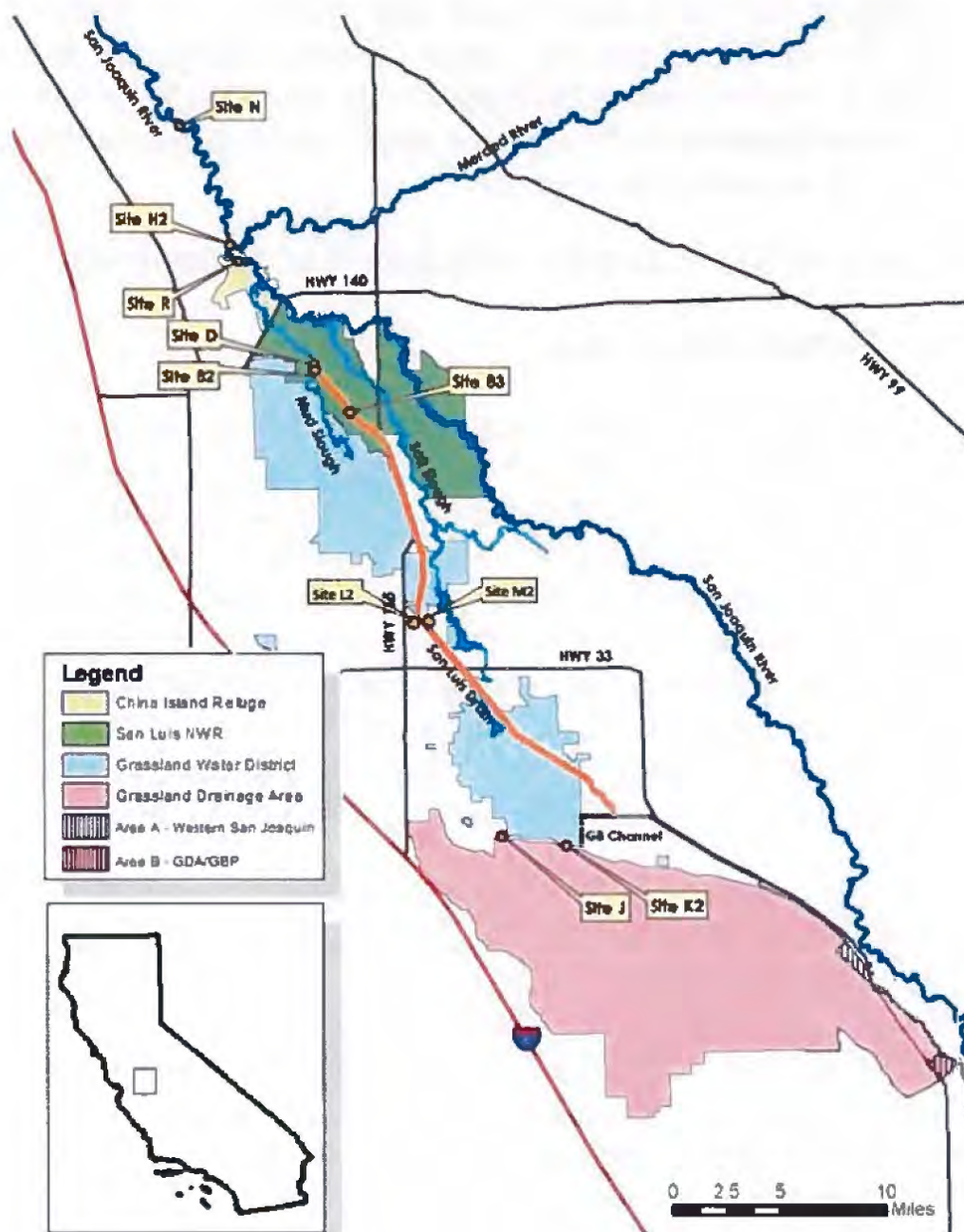
violation of the Clean Water Act (CWA), 33 U.S.C. §§ 1251–1387. Plaintiffs appeal several rulings by the district court in favor of Defendants that ultimately led to the stipulated dismissal of Plaintiffs’ single claim remaining for trial. We reverse and remand.

FACTUAL AND PROCEDURAL BACKGROUND

A. Factual Background

As “the largest federal water management project in the United States,” the Central Valley Project (CVP) “provides the water that is essential to [the California Central Valley’s] unparalleled productivity.” *Cent. Delta Water Agency v. United States*, 306 F.3d 938, 943 (9th Cir. 2002). Among other functions, the CVP “transfer[s] water from the Sacramento River to water-deficient areas in the San Joaquin Valley and from the San Joaquin River to the southern regions of the Central Valley.” *San Luis & Delta-Mendota Water Auth. v. Jewell*, 747 F.3d 581, 594 (9th Cir. 2014).

“Any water project that brings fresh water to an agricultural area must take the salty water remaining after the crops have been irrigated away from the service area.” *Firebaugh Canal Co. v. United States*, 203 F.3d 568, 571 (9th Cir. 2000). Otherwise, irrigating the selenium and salt-rich soils causes pollutants to leach into groundwater. The Grasslands Bypass Project (the Project), jointly administered by Defendants, was created for this purpose. The Project is “a tile drainage system that consists of a network of perforated drain laterals underlying farmlands in California’s Central Valley that catch irrigated water and direct it to” surrounding waters. The map below depicts the Project’s location:



The Project includes the San Luis Drain (the Drain), labeled on the map above, which is designed to collect and convey contaminated groundwater from lands adjacent to and upstream of the Drain to Mud Slough. As both parties

acknowledge, the Drain discharges substantial quantities of selenium and other pollutants into the Mud Slough, the San Joaquin River, and the Bay-Delta Estuary.

B. Procedural Background

Plaintiffs filed their initial complaint in November 2011, alleging that Defendants violated the CWA by discharging pollutants into the waters of the United States without a National Pollutant Discharge Elimination System (NPDES) permit, in violation of 33 U.S.C. § 1311(a). After the district court granted Defendants' motion to dismiss with leave to amend, Plaintiffs filed their First Amended Complaint (FAC).

Defendants then moved to dismiss the FAC. The court granted the motion as to all but one of Plaintiffs' claims. It determined that Plaintiffs had plausibly alleged facts "that, when accepted as true, suggest [that] at least some amount of the Project's discharges may be unrelated to crop production."

The parties then filed cross-motions for summary judgment. The court denied Plaintiffs' motion for summary judgment and granted in part Defendants' motion for summary judgment. The court held that three of Plaintiffs' theories of liability in their motion for summary judgment—arguments about discharges from "seepage into the [Drain] from adjacent lands, and sediments from within the [Drain]"—did not arise from the allegations in their FAC. Accordingly, the court struck those three theories of liability. The court also determined, however, that there was a genuine dispute of material fact as to whether groundwater discharges from lands underlying a solar project violated the CWA (the Vega Claim). It therefore denied Defendants' motion for summary judgment as to that claim.

Plaintiffs moved to file a second amended complaint. The court denied that motion. The court also denied Plaintiffs' motion to reconsider its order ruling on the cross-motions for summary judgment. The parties then stipulated to the dismissal of Plaintiffs' lone remaining claim "because the discharges from the Vega Solar Project property do not make up a majority of discharges from the [Project]." The district court entered judgment for Defendants.

JURISDICTION AND STANDARD OF REVIEW

We have jurisdiction pursuant to 28 U.S.C. § 1291. We review *de novo* the district court's grant of summary judgment. *Nat. Res. Def. Council, Inc. v. County of Los Angeles*, 725 F.3d 1194, 1203 (9th Cir. 2013). We also review *de novo* "the district court's interpretation of the CWA and its implementing regulations." *Olympic Forrest Coal. v. Coast Seafoods Co.*, 884 F.3d 901, 905 (9th Cir. 2018).

ANALYSIS

I. The District Court's Interpretation of § 1342(l)(1)

The CWA generally requires that government agencies obtain an NPDES permit before discharging pollutants from any point source into navigable waters of the United States.¹ 33 U.S.C. § 1323(a). There is an exception to that permitting requirement, however, "for discharges composed entirely of

¹ The CWA defines "point source" as "any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged." 33 U.S.C. § 1362(14).

return flows from irrigated agriculture” *Id.* § 1342(l)(1).

The parties do not disagree that the Mud Slough, the San Joaquin River, and the Bay-Delta Estuary constitute navigable waters of the United States. They also do not dispute that the Drain “discharges substantial quantities of selenium and other pollutants.” At issue then is whether the Drain’s discharges required Defendants to obtain an NPDES permit, or whether the discharges were exempt from the permitting requirement pursuant to § 1342(l)(1).

Plaintiffs argue that the district court committed three errors in its interpretation of § 1342(l)(1). First, they contend that the district court erred by placing the burden of proving that the Drain’s discharges were not exempt on Plaintiffs instead of requiring that Defendants prove that the Drain’s discharges were exempt. Second, they argue that the court erred in interpreting what constitutes “discharges . . . from irrigated agriculture” when it held that all discharges from the Drain are exempted so long as they are not generated by activities unrelated to crop production. Third, they assert that the district court erred by interpreting the word “entirely” as meaning most. We address each argument in turn.

A. Burden of Proving the Statutory Exception

In its pretrial order, the district court stated that Plaintiffs bore the burden of demonstrating that the discharges at issue were not exempt from the CWA’s permitting requirement pursuant to § 1342(l)(1). Plaintiffs argue that such an interpretation of the statute was erroneous because the burden was on Defendants to prove that the discharges at issue were covered by § 1342(l)(1).

We agree. To establish a violation of the CWA, “a plaintiff must prove that defendants (1) discharged, i.e., added (2) a pollutant (3) to navigable waters (4) from (5) a point source.” *Comm. to Save Mokelumne River v. E. Bay Mun. Util. Dist.*, 13 F.3d 305, 308 (9th Cir. 1993). After a plaintiff establishes those elements, however, the defendant carries the burden to demonstrate the applicability of a statutory exception to the CWA. *See N. Cal. River Watch v. City of Healdsburg*, 496 F.3d 993, 1001 (9th Cir. 2007). Because § 1342(l)(1) contains an exception to the CWA’s permitting requirement, Defendants had the burden of establishing that the Project’s discharges were “composed entirely of return flows from irrigated agriculture.”

B. Interpretation of “Irrigated Agriculture”

The district court construed § 1342(l)(1) as exempting discharges that are related to crop production from the CWA’s permitting requirement. The parties agree that, by focusing on the statute’s legislative history *ab initio*, rather than commencing its analysis with the text, the district court’s interpretive method was flawed.

“It is well settled that ‘the starting point for interpreting a statute is the language of the statute itself.’” *Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Found., Inc.*, 484 U.S. 49, 56 (1987) (quoting *Consumer Prod. Safety Comm’n v. GTE Sylvania, Inc.*, 447 U.S. 102, 108 (1980)). Section 1342(l)(1) states that “[t]he Administrator shall not require a permit under this section for discharges . . . from irrigated agriculture.” 33 U.S.C. § 1342(l)(1). Here, rather than starting its analysis with the text, the district court focused first on the Senate Committee Report

accompanying the CWA to hold that the relevant statutory text—“discharges . . . from irrigated agriculture”—meant discharges that “do not contain additional discharges from activities unrelated to crop production.”

Although we agree that the district court ought to have begun its analysis with the statutory text, its reliance on legislative history to construe this portion of the statute was not erroneous. “It is a fundamental canon of statutory construction that the words of a statute must be read in their context and with a view to their place in the overall statutory scheme.” *Davis v. Michigan Dep’t. of Treasury*, 489 U.S. 803, 809 (1989). “The purpose of statutory construction is to discern the intent of Congress in enacting a particular statute.” *Robinson v. United States*, 586 F.3d 683, 686 (9th Cir. 2009) (quoting *United States v. Daas*, 198 F.3d 1167, 1174 (9th Cir. 1999)).

Section 1342(l)(1) does not define “irrigated agriculture.” In determining the plain meaning of a word, we may consult dictionary definitions in an attempt to capture the common contemporary understandings of a word. *See Transwestern Pipeline Co., LLC v. 17.19 Acres of Prop. Located in Maricopa Cnty.*, 627 F.3d 1268, 1270 (9th Cir. 2010). The definition of agriculture—“the science or art of cultivating the soil, harvesting crops, and raising livestock,” *Webster’s Third New International Dictionary* 44 (2002)—shows that the term has a broad meaning that encompasses crop production. The “ordinary, contemporary, and common meaning” of agriculture likewise supports a broad interpretation of the term. *United States v. Iverson*, 162 F.3d 1015, 1022 (9th Cir. 1998).

Although the plain meaning of the statutory text demonstrates that agriculture has a broad meaning, it does not resolve whether the discharges at issue here are exempt from the CWA's permitting requirement.² As a result, "we may [also] use canons of construction, legislative history, and the statute's overall purpose to illuminate Congress's intent" in enacting § 1342(l)(1). *Ileto v. Glock, Inc.*, 565 F.3d 1126, 1133 (9th Cir. 2009) (quoting *Jonah R. v. Carmona*, 446 F.3d 1000, 1005 (9th Cir. 2006)).

In this instance, we begin by considering the legislative history of § 1342(l)(1). In its original form, the CWA did not contain any exceptions to its permitting requirement. *See Nw. Env'tl. Def. Ctr. v. Brown*, 640 F.3d 1063, 1072 (9th Cir. 2011), *rev'd and remanded sub nom. Decker v. Nw. Env'tl. Def. Ctr.*, 568 U.S. 597 (2013). Five years after its enactment, however, Congress amended the CWA to include an exception for discharges composed entirely of return flows from irrigated agriculture. *Id.* at 1073. "Congress did so to alleviate EPA's burden in having to issue permits for every agricultural point source." *Id.* By passing § 1342(l)(1), Congress sought "to limit the exception to only those flows which do not contain additional discharges from activities unrelated to crop production." S. Rep. No. 95-370, 35 (1977), *as reprinted in* 1977 U.S.C.C.A.N. 4326, 4360. This history supports the district court's interpretation of "irrigated agriculture" as used in § 1342(l)(1).

The statute's legislative history also reveals that Congress passed § 1342(l)(1) to treat equally under the

² One issue disputed by the parties, for example, is whether discharges from fallow and retired lands fall under § 1342(l)(1). The plain meaning of the statutory text does not definitively answer that question.

CWA's permitting requirement farmers relying on irrigation and those relying on rainfall. *See* 123 Cong. Rec. 39,210 (Dec. 15, 1977) (statement of Sen. Wallop: "This amendment corrects what has been a discrimination against irrigated agriculture. . . . Farmers in areas of the country which were blessed with adequate rainfall were not subject to permit requirements on their rainwater run-off, which in effect . . . contained the same pollutants."); 123 Cong. Rec. 26,702 (Aug. 4, 1977) (statement of Sen. Stafford: "This amendment promotes equity of treatment among farmers who depend on rainfall to irrigate their crops and those who depend on surface irrigation which is returned to a stream in discreet conveyances."). Indeed, one legislator said that an NPDES permit would not be required for "a vast irrigation basin that collects all of the waste resident of irrigation water in the Central Valley and places it in [the San Luis Drain] and transport[s] it . . . [to] the San Joaquin River." *Brown*, 640 F.3d at 1072. This history supports the view that Congress intended for "irrigated agriculture," as used in § 1342(l)(1), to be defined broadly and include discharges from all activities related to crop production.

Plaintiffs argue that such an interpretation of the statutory exception is erroneous because it would exempt fallow and retired lands from the CWA's permitting requirement. That result, however, complies with our prior case law addressing the Project. We have ordered Defendants, in separate litigation, to provide drainage "to lands receiving water through the San Luis Unit." *Firebaugh Canal Co.*, 203 F.3d at 572. The retirement of farmlands was a component of that drainage plan. *Firebaugh Canal Water Dist. v. United States*, 712 F.3d 1296, 1300 (9th Cir. 2013). To hold that drainage from retired lands does not fall under the CWA's statutory exception for discharges from irrigated agriculture would

lead to contradictory and illogical results. *Cf. United States v. Fiorillo*, 186 F.3d 1136, 1153 (9th Cir. 1999). We decline to require Defendants to provide a drainage plan that includes the retirement of farmland, on the one hand, and hold that those activities violate the CWA absent a permit, on the other.

For these reasons, § 1342(l)(1)'s statutory text, as well as its context, its legislative history, and our prior case law on the Project, demonstrate that Congress intended to define the term "irrigated agriculture" broadly. Accordingly, we hold that the district court's interpretation of the phrase was accurate.

C. Interpretation of "Entirely"

We next address Plaintiffs' contention—which Defendants do not dispute—that the district court erred by holding that § 1342(l)(1) exempts discharges from the CWA's permitting requirement unless a "majority of the total commingled discharge" is unrelated to crop production. They argue that such an interpretation of the statutory text was mistaken because the text states that the exception applies to "discharges composed *entirely* of return flows from irrigated agriculture." 33 U.S.C. § 1342(l)(1).

We agree that the district court's majority rule interpretation misconstrued the meaning of "entirely," as used in § 1342(l)(1). Although "entirely" is not defined by the statute, we begin by considering its "ordinary, contemporary, common meaning." *Iverson*, 162 F.3d at 1022. "Entirely" is defined as "wholly, completely, fully." *Webster's Third New International Dictionary* 758 (2002). That definition differs significantly from "majority," the meaning that the district court gave the term.

The district court rejected a literal interpretation of “entirely” because it reasoned that it “would lead to an absurd result.” We disagree. “Claims of exemption, from the jurisdiction or permitting requirements, of the CWA’s broad pollution prevention mandate must be narrowly construed to achieve the purposes of the CWA.” *N. Cal. River Watch*, 496 F.3d at 1001. Given the many activities related to crop production that fall under the definition of “irrigated agriculture,” Congress’s use of “entirely” to limit the scope of the statutory exception thus makes perfect sense. The text demonstrates that Congress intended for discharges that include return flows from activities unrelated to crop production to be excluded from the statutory exception, thus requiring an NPDES permit for such discharges.

D. Effect of Errors on Plaintiffs’ Claims

Having determined that the district court erred by placing the burden of demonstrating eligibility for the exception on Plaintiffs, rather than on Defendants, and by misinterpreting “entirely,” as used in § 1342(l)(1), we next consider the effect of those errors on Plaintiffs’ claims. Defendants argue that the district court’s errors were harmless because “the record contains no evidence of *any* discharge of pollutants unrelated to agricultural flows.”

We begin with Plaintiffs’ Vega Claim. The district court denied Defendants’ motion for summary judgment as to that claim because it determined that “Plaintiffs [] have provided sufficient evidence to raise an inference that discharges underneath the Vega Project originate from the solar project itself, as opposed to [from] other nearby agricultural lands.” Plaintiffs stipulated to the dismissal of that claim because they were “unlikely to succeed [in demonstrating that] the discharges from the [Vega Claim] do not make up a majority

of discharges from the [Project].” The district court’s interpretation of the word “entirely” to mean “majority”—which Defendants now concede was erroneous—was thus the but-for cause of the dismissal of Plaintiffs’ Vega Claim. It is reasonable to believe that Plaintiffs would have proceeded to trial under the correct interpretation of § 1342(l)(1), which requires Defendants to prove that the discharges were composed entirely of return flows from irrigated agriculture. We therefore reverse the district court’s dismissal of that claim.

The district court’s dismissal of Plaintiffs’ other claims was also erroneous. In its order ruling on the parties’ cross-motions for summary judgment, the district court determined that, apart from the Vega Claim, Plaintiffs had failed to “provide any evidence” to show that discharges stemmed from activities unrelated to crop production. Because the burden of demonstrating the applicability of § 1342(l)(1) should have been on Defendants, rather than on Plaintiffs, however, Plaintiffs were not required to present any evidence. Instead, Defendants ought to have been required to demonstrate that the discharges at issue were composed entirely of return flows from irrigated agriculture. Accordingly, even if there were a lack of evidence demonstrating that the discharges stemmed from activities unrelated to crop production, it should not have been fatal to Plaintiffs. *Cf. Gilbrook v. City of Westminster*, 177 F.3d 839, 871 (9th Cir. 1999) (“Such an inference from lack of evidence would amount to no more than speculation.”). We therefore reverse the district court’s dismissal of Plaintiffs’ other claims and remand for the district court to reconsider them under the correct interpretation of § 1342(l)(1).

II. The District Court's Striking of Plaintiffs' Claims

Plaintiffs argue that the district court also erred by striking their theories of liability “based on discharges from highways, residences, seepage into the [Drain] from adjacent lands, and sediments from within the [Drain]” from Plaintiffs’ motion for summary judgment. The court held that those claims were not encompassed by Plaintiffs’ FAC.

“Rule 8’s liberal notice pleading standard . . . requires that the allegations in the complaint ‘give the defendant fair notice of what the plaintiff’s claim is and the grounds upon which it rests.’” *Pickern v. Pier 1 Imports (U.S.), Inc.*, 457 F.3d 963, 968 (9th Cir. 2006) (quoting *Swierkiewicz v. Sorema N.A.*, 534 U.S. 506, 512 (2002)). “A party need not plead specific legal theories in the complaint, so long as the other side receives notice as to what is at issue in the case.” *Am. Timber & Trading Co. v. First Nat’l Bank of Oregon*, 690 F.2d 781, 786 (9th Cir. 1982). But if “the complaint does not include the necessary factual allegations to state a claim, raising such claim in a summary judgment motion is insufficient to present the claim to the district court.” *Navajo Nation v. U.S. Forest Serv.*, 535 F.3d 1058, 1080 (9th Cir. 2008).

Here, Plaintiffs’ FAC alleged that the Drain discharged “polluted groundwater . . . originating from parcels where no farming occurs because, for instance, these parcels have been fallowed or retired from agricultural use.” The theories of liability struck by the district court argued that Defendants violated the CWA because the Drain picked up seepage from non-irrigated land on its way to the Mud Slough, and because the Drain discharged pollutants from seepage and sediment within the Drain.

Although we agree with Defendants that Plaintiffs' complaint did not specifically allege their seepage and sediment theories of liability, we reject the contention that Defendants had not been given fair notice of those theories. Plaintiffs' essential allegation was that the Drain's discharges violated the CWA because of where the contaminants in the discharges originated from—"for instance, [] parcels [that] have been fallowed or retired from agricultural use." Plaintiffs' seepage and sediment claims, which alleged that contaminants from "highways, residences, seepage . . . and sediment" commingled with other discharges and thereby violated the CWA, alleged that contaminants originated from other locations, too. Those allegations were thus encompassed by the allegations in the FAC. Indeed, at oral argument, Defendants conceded that they "received [Plaintiffs'] expert witness reports," "were on notice as to what their expert was talking about," and "had enough information to respond" to the seepage and sediment theories of liability discussed in Plaintiffs' expert witness reports. These facts, when taken together, compel the conclusion that Plaintiffs' FAC provided Defendants with fair notice of their seepage and sediment theories of liability. Accordingly, we reverse the district court's striking of Plaintiffs' seepage and sediment claims from their motion for summary judgment.³

³ The district court held, in the alternative, that Plaintiffs' seepage and sediment claims were "unsupported by evidence." Because we hold that the district court erred in its interpretation of § 1342(l)(1), however, we remand Plaintiffs' seepage and sediment claims for the district court to determine whether they survive summary judgment under the correct interpretation of the statutory exemption.

CONCLUSION

The district court properly interpreted “discharges . . . from irrigated agriculture,” as used in § 1342(l)(1), to mean discharges from activities related to crop production. It erred, however, by interpreting “entirely” to mean “majority,” and by placing the burden on Plaintiffs to demonstrate that the discharges were not covered under § 1342(l)(1), rather than placing the burden on Defendants to demonstrate that the discharges were covered under § 1342(l)(1). The district court also erred by striking Plaintiffs’ seepage and sediment theories of liability from Plaintiffs’ motion for summary judgment because the FAC encompassed those claims.

REVERSED and REMANDED.

Comment Letter 5



December 23, 2019

Rain Emerson
Environmental Compliance Branch Chief
Bureau of Reclamation, South-Central California Area Office
1243 N Street
Fresno, CA 93721

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Stephen J. Welch, P.E., S.E.

Subject: Draft Environmental Assessment for 10-Year Use Agreement for the Grassland Bypass Project

Dear Ms. Emerson:

Contra Costa Water District (CCWD) appreciates the opportunity to comment on the Draft Environmental Assessment (EA) and the draft Use Agreement (4th Use Agreement) for the San Luis & Delta Mendota Water Authority's Long-Term Storm Water Management Plan for the Grassland Drainage Area (GDA). CCWD has engaged in the stakeholder process that negotiated the previous Agreements for Use of San Luis Drain for the Grassland Bypass Project between the Bureau of Reclamation and the San Luis & Delta Mendota Water Authority (Use Agreements) over the past several decades. In 2019, CCWD has invested a significant amount of time to provide stakeholder input to the Long-Term Storm Water Management Plan for the Grassland Drainage Area, including two official comment letters: (1) CCWD comments on the Addendum to the Final Environmental Impact Statement/Environmental Impact Report for consideration of the Grassland Bypass Project and the associated Initial Study, dated September 13, 2019; (2) CCWD comments on the tentative Waste Discharge Requirements for Surface Water Discharges from the Grassland Bypass Project in Merced and Fresno Counties, dated November 6, 2019. Both letters are attached for reference.

The draft EA is inadequate under National Environmental Policy Act (NEPA) until the following comments are addressed:

1. The term of the 4th Use Agreement should be no more than 2 years.

CCWD's November 9th, 2019 comment letter provides details about the uncertainties related to the Grassland Bypass Project, specifically, the potential impacts of stormwater discharge on fish and salt accumulation in the Reuse Area for the San Joaquin River Improvement Project. Considering these uncertainties, Central Valley Regional Water Quality Control Board approved a 2-year reopener to the waste discharge requirements (WDRs) for the Grassland Bypass Project. The draft EA is not able to address these uncertainties at this moment. Therefore, the 4th Use Agreement should mirror the WDRs and evaluate the adequacy of the stormwater plan in two years at the latest, or as new science and data become available.

2. The draft EA fails to disclose, or even to acknowledge, the impacts of the drainage from the GDA on shorebirds and splittail in the Delta.

The 2016 Wildlife Monitoring Report of the San Joaquin River Water Quality Improvement Project showed elevated selenium concentration in shorebird eggs (Tables 3 to 5 of the 2016 Monitoring Report) and an increasing trend through time in egg selenium concentrations. In addition, a recent study by National Marine Fisheries Service¹ showed that splittail with spinal deformities were observed in the Delta in 2011 (a wet year), with evidence suggesting that elevated selenium from the San Joaquin River during storm events could be a contributing factor. The draft EA failed to acknowledge the above impacts on wildlife, or to identify necessary measures to mitigate the impacts.

3. The draft EA fails to quantify the water quality degradation impacts due to storm water discharges.

The draft EA showed the decreasing trend of selenium and salt loads from the GDA and the concentrations of several constituents at downstream compliance points. However, it failed to quantify the increment of the contaminant loads/concentrations that are due to discharges from the GDA. Meeting water quality objectives does not mean there is no degradation of existing water quality caused by the discharges. Also, since the compliance locations are sometimes miles downstream from the discharge point, meeting the objectives at the compliance locations does not mean there are no impacts in the receiving waters and mixing zone. In addition, although the 4th Use Agreement is only for stormwater discharges, the accumulation of salt and mobilization of selenium and boron in the GDA are caused by irrigation activities. Therefore, the water quality impacts of the discharges must be quantified.

4. The draft 4th Use Agreement fails to impose a protective selenium goal at Mud Slough.

It has been well supported by scientific research that 2 ppb selenium concentration is necessary to protect aquatic species. Please refer to the comment letter by The Bay Institute for more details.

5. The draft 4th Use Agreement fails to impose any salt discharge limits on stormwater discharge.

The salt accumulation observed in the Reuse Area for the San Joaquin River Improvement Project and the need for salt discharge limits have been discussed in CCWD's previous comment letters. Regulating salt is not achieved by regulating selenium, because the two constituents are influenced by different mechanisms and have been demonstrated to follow different trends in the GDA (shown in Figure 1).

¹ Rachel Johnson, Standing Too Close to the Elephant: Addressing Scales in Restoration and Fisheries Conservation, presentation at the 14th Biennial State of the San Francisco Estuary Conference, October 22, 2019.

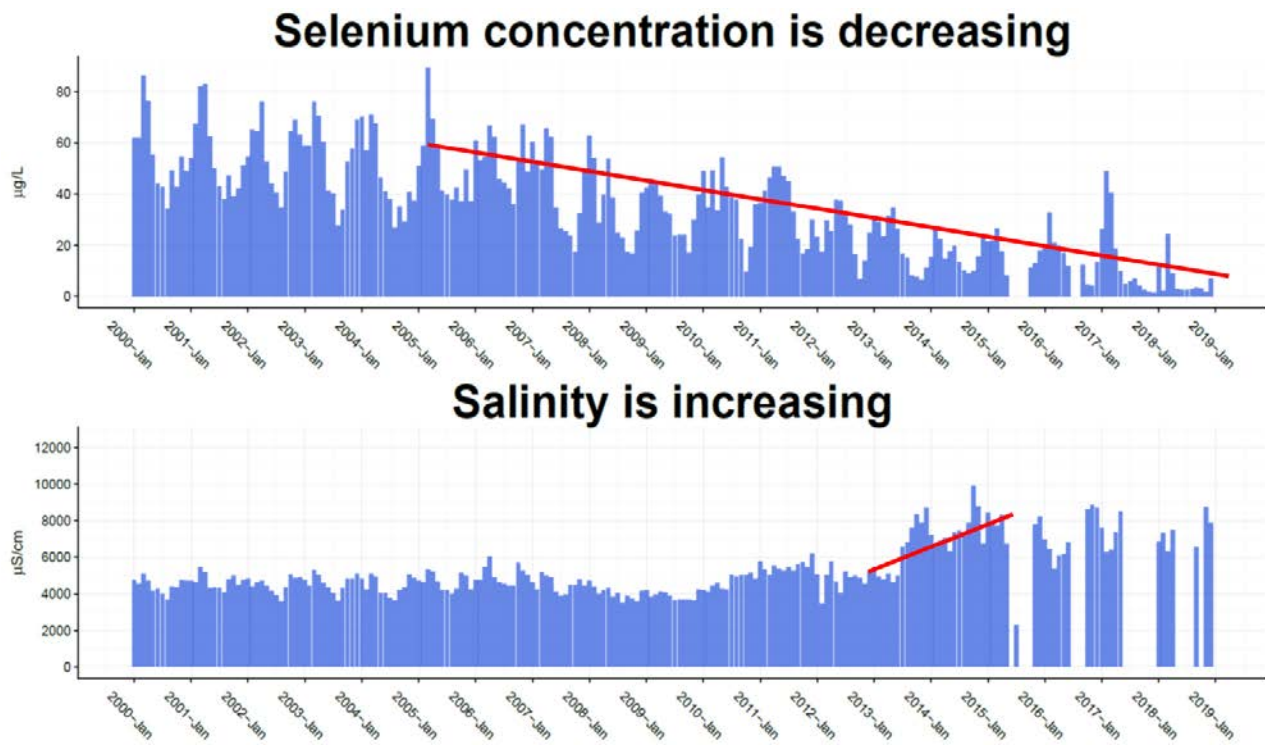


Figure 1 Monthly Average Selenium (Site A) and Salinity (Site B) Concentrations of Discharges from the GDA

CCWD looks forward to continuing to work with Reclamation on this important project to protect Delta and San Joaquin River wildlife refuge water quality. If you have any questions, please do not hesitate to get in touch with Lucinda Shih at (925) 688-8168 or lshih@ccwater.com, or with Yuan Liu at (925) 688-8282 or yliu@ccwater.com.

Sincerely,

Leah Orloff

LHS/YL:wec

Attachments

cc: Ryan Hernandez, Contra Costa County
Gary Bobker, The Bay Institute
Rachel Zwilling, Defenders of Wildlife



September 13, 2019

Joseph C. McGahan
 Drainage Coordinator
 San Luis & Delta-Mendota Water Authority
 P.O. Box 2157
 Los Banos, CA 93635
jmcgahan@summerseng.com

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Jerry Brown

Subject: Long-Term Storm Water Management Plan for the Grassland Bypass Project 2020-2045

Dear Mr. McGahan:

Contra Costa Water District (CCWD) appreciates the opportunity to comment on the Draft Long-Term Storm Water Management Plan 2020-2045 – Addendum to the Final Environmental Impact Statement/Environmental Impact Report (Final EIS/EIR) for consideration of the Grassland Bypass Project (Draft Addendum) and the associated Initial Study. CCWD has engaged in the stakeholder process that negotiated the previous Agreements for Use of San Luis Drain for the Grassland Bypass Project between the Bureau of Reclamation and the San Luis & Delta Mendota Water Authority (Use Agreements) over the past several decades, and we look forward to continuing our good relationship with the Grassland Area Farmers as we work towards a sustainable storm water management plan.

First, we would like to applaud the Grassland Area Farmers for successfully implementing the Grassland Bypass Project over the past 30 years, which has kept selenium-rich drainage out of the adjacent wildlife area and reduced the discharged selenium load by 96% and salt load by 80%. The significant reduction in discharged contaminants and salt helps protect our precious shared water resources and downstream beneficial uses. The Grassland Bypass Project has proved to be a feasible in-valley solution for agricultural drainage issues and should be used as a model for the entire Central Valley as it is seeking sustainable valley-wide salinity alternatives.

The Final Addendum should include quantifiable constraints to ensure that the trend of selenium and salt discharge reduction is not reversed and loopholes are not created by storm water discharge permits. CCWD also would like to encourage continued efforts towards reaching the goal of “zero discharge” in both selenium and salt as new technologies become available. Addressing the following specific comments in the Final Addendum will ensure that it is adequate under the California Environmental Quality Act.

1. The impacts of storm water discharges with the proposed management plan should be quantified.

The remaining element of drainage management from the Grassland Area, that of storm water management, will be challenging. Due to the uncertainties associated with storm water events, the Initial Study for the Long-Term Storm Water Management Plan did not provide quantitative

evaluation of discharges and water quality impacts with full implementation of the proposed mitigation measures. Instead, the Initial Study used historical data from 2015 to 2018 as a surrogate and assumed the actual impacts in the future would be less. CCWD agrees with the assessment that storm water events are inherently uncertain, but historical precipitation levels over a longer period should be used to estimate discharges in order to analyze likely impacts for a range of flows over different water year types.

2. A storm-driven event should be clearly defined.

The Addendum and the new agreement to use the San Luis Drain beyond 2019 (Storm Water Use Agreement) are only intended to address storm water discharge. The Draft Addendum should include a clear and quantifiable definition of a storm-driven event under which the San Luis Drain would be used. Without a clear definition, it is possible that storm water discharge permits could provide a loophole for discharging agricultural drainage and might create unintended environmental consequences.

3. Seasonal and annual load and concentration limits for selenium and salt should be specified.

The current Agreement for Continued Use of San Luis Drain (Use Agreement) clearly defines milestones to guide continuous reductions in selenium and salt discharges from the Grassland Area. In the Draft Addendum, seasonal and annual load and concentration limits, no greater than the limits for Year 2019 in the current Use Agreement, should be applied. These limits would also provide checkpoints for storm water management in the long term – if the limits are exceeded, the environmental impacts should be re-evaluated, and new actions to keep discharges within the limits should be explored.

4. Details of comprehensive monitoring plans should be added.

The current Use Agreement is implemented with a comprehensive water quality monitoring plan to ensure that the selenium and salt loads are not exceeded and a comprehensive biological monitoring plan to track of the contaminant levels in bird eggs in the area. These monitoring plans are key to measuring the progress of the Grassland Bypass Project and identifying effective drainage management actions and should continue to be implemented under the future Storm Water Use Agreement. Therefore, the Draft Addendum and Initial Study should also include details of comprehensive monitoring plans, as well as monitoring details for the new regulating reservoirs and the expanded reuse area if any.

5. The sustainability of the Reuse Area for the San Joaquin River Improvement Project should be evaluated more closely.

Figure 1 below shows the daily and monthly average salinity of the discharge from the Grassland Bypass Project as electrical conductivity (EC) values for 2000 to 2019. Since 2014, when the discharges to the San Luis Drain were reduced to storm water discharges only, the discharged salinity from the Grassland Area has increased. Although some freshening was observed after wet seasons, the overall salinity was higher post-2014 than pre-2014, when discharges occurred throughout the year. This indicates potential salt accumulation in the

Reuse Area as the discharge flows decrease. If salt keeps accumulating, the discharged salt loads and impacts on downstream water quality could increase, even with the same or lesser discharge flows. It is also possible that salt accumulation in the Reuse Area would impact the continued use of the Grassland Area in the long term, which is key to success of the Grassland Bypass Project. These potential outcomes and impacts need to be more closely evaluated. If needed, more aggressive actions, such as land retirement and desalination, should be considered to achieve salt balance and to obtain sustainability of the Reuse Area without discharging more drainage into the San Luis Drain.

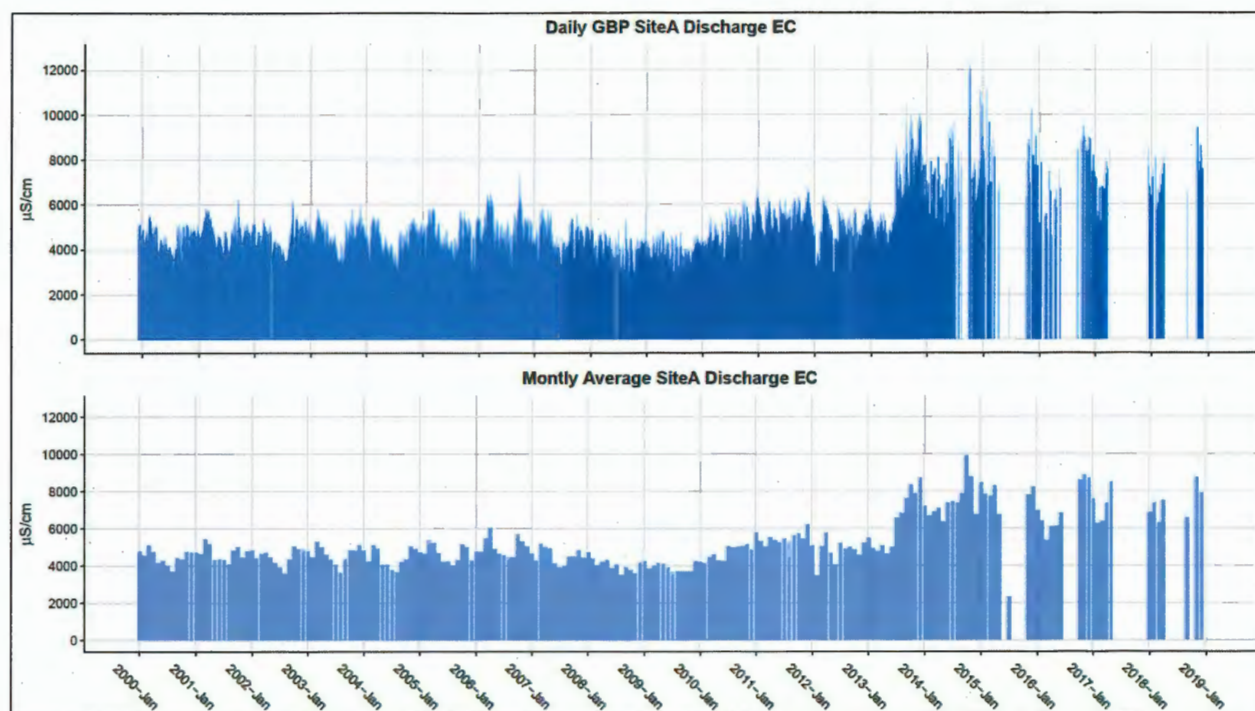


Figure 1 Electrical conductivity (EC) of discharges from Grassland Bypass Project (GBP) (2000 – 2019)

6. The Storm Water Use Agreement must be consistent with the Draft Addendum, and should also reflect the above comments.

It is our understanding that the Storm Water Use Agreement will be negotiated with, and a separate NEPA (National Environmental Policy Act) document prepared by, the Bureau of Reclamation later this year. CCWD appreciates being included in this stakeholder process. However, without the publication of a draft Storm Water Use Agreement, we are not able to review the details of the actual long-term storm water management plan at this time. The Storm Water Use Agreement must be consistent with the Draft Addendum, and both documents should also incorporate our comments in this letter.

Joseph C. McGahan, San Luis & Delta-Mendota Water Authority
Long-Term Storm Water Management Plan for the Grassland Bypass Project 2020–2045
September 13, 2019
Page 4

If you have any questions, please do not hesitate to get in touch with Lucinda Shih at (925) 688-8168 or lushih@ccwater.com, or with Yuan Liu at (925) 688-8282 or ylui@ccwater.com. We look forward to continuing to work with you on this important project.

Sincerely,



Leah Orloff
Water Resources Manager

LHS/YL:wec

cc: Ryan Hernandez, Contra Costa County
Gary Bobker, The Bay Institute
Rachel Zwillinger, Defenders of Wildlife



November 6, 2019

Ashley Peters
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive #200
Rancho Cordova, CA 95670-6114
Ashley.Peters@waterboards.ca.gov

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Jerry Brown

Subject: Tentative Waste Discharge Requirements for Surface Water Discharges from the Grassland Bypass Project

Dear Ms. Peters:

Contra Costa Water District (CCWD) appreciates the opportunity to comment on the tentative Waste Discharge Requirements for Surface Water Discharges from the Grassland Bypass Project in Merced and Fresno Counties (Tentative Order). CCWD serves drinking water to approximately 500,000 people and to a wide variety of commercial, industrial and other water users in central and eastern Contra Costa County. CCWD relies solely on the Sacramento-San Joaquin Delta (Delta) for its water supply. Delta salinity is highly variable both seasonally and interannually. Over the past 3 decades, CCWD has invested over a billion and a half dollars in infrastructure to ensure that high-quality water can be stored when available and be used to provide consistently high-quality water to its customers. Anything that increases salinity in the Delta makes it harder and more expensive to achieve this goal, even when the water quality degradation does not cause water quality objectives to be exceeded.

CCWD has engaged in the stakeholder process that negotiated the previous Agreements for Use of the San Luis Drain for the Grassland Bypass Project (Project) between the Bureau of Reclamation and the San Luis & Delta Mendota Water Authority (Use Agreements) over the past several decades. We would like to applaud the Grassland Area Farmers for the successful implementation of the Grassland Bypass Project, which has kept selenium-rich drainage out of the adjacent wildlife area and reduced the discharged selenium load by 96% and salt load by 80%. The significant reduction in discharged contaminants and salt helps protect our precious shared water resources and downstream beneficial uses. The Grassland Bypass Project has proved to be a feasible in-valley solution for agricultural drainage issues and should be used as a model for the entire Central Valley as it is seeking sustainable valley-wide salinity alternatives.

However, uncertainties and concerns remain as the Project moves into the storm water management phase. As we have discussed with you and your staff, CCWD suggests the following revisions to the Tentative Order to ensure that the trend of selenium and salt discharge reduction is not reversed and loopholes are not created.

1. The Tentative Order should include a re-opener at least every 5 years.

The Tentative Order proposed a term of 26 years, which is too long given the ever-evolving environment associated with the Project and downstream conditions in general. For example, a recent study by National Marine Fisheries Service¹ showed that splittail with spinal deformities were observed in the Delta in 2011 (a wet year), with evidence suggesting that elevated selenium from the San Joaquin River during storm events could be a contributing factor. If future studies confirm this suggestion, more protective selenium objectives should be applied, and additional drainage management actions should be taken to avoid transport and bio-accumulation of selenium downstream.

Also, as discussed in CCWD's comment letter dated September 13, 2019, on the Draft Long-Term Storm Water Management Plan 2020–2045 for the Grassland Bypass Project (Attachment), salt accumulation has been observed in the Reuse Area for the San Joaquin River Improvement Project (shown below in Figure 1). If salt continues accumulating, the discharged salt loads during storm events and impacts on downstream water quality could increase, even with the same or smaller discharge flows. CCWD appreciates that monitoring and reporting will continue into the future. The monitoring data gathered by the Project and associated efforts will be needed to analyze salinity trends and impacts and inform potential additional management actions.

Given the above uncertainties and the possibility of further changed conditions or new information, we suggest that the Tentative Order include a provision to reassess the Waste Discharge Requirements for the Project at least every 5 years. It is prudent to regularly schedule a formal opportunity to revisit the requirements to make sure they are still protective of beneficial water uses. In the meantime, the impacts associated with the above uncertainties should be evaluated as more science and monitoring data become available.

¹ Rachel Johnson, Standing Too Close to the Elephant: Addressing Scales in Restoration and Fisheries Conservation, presentation at the 14th Biennial State of the San Francisco Estuary Conference, October 22, 2019.

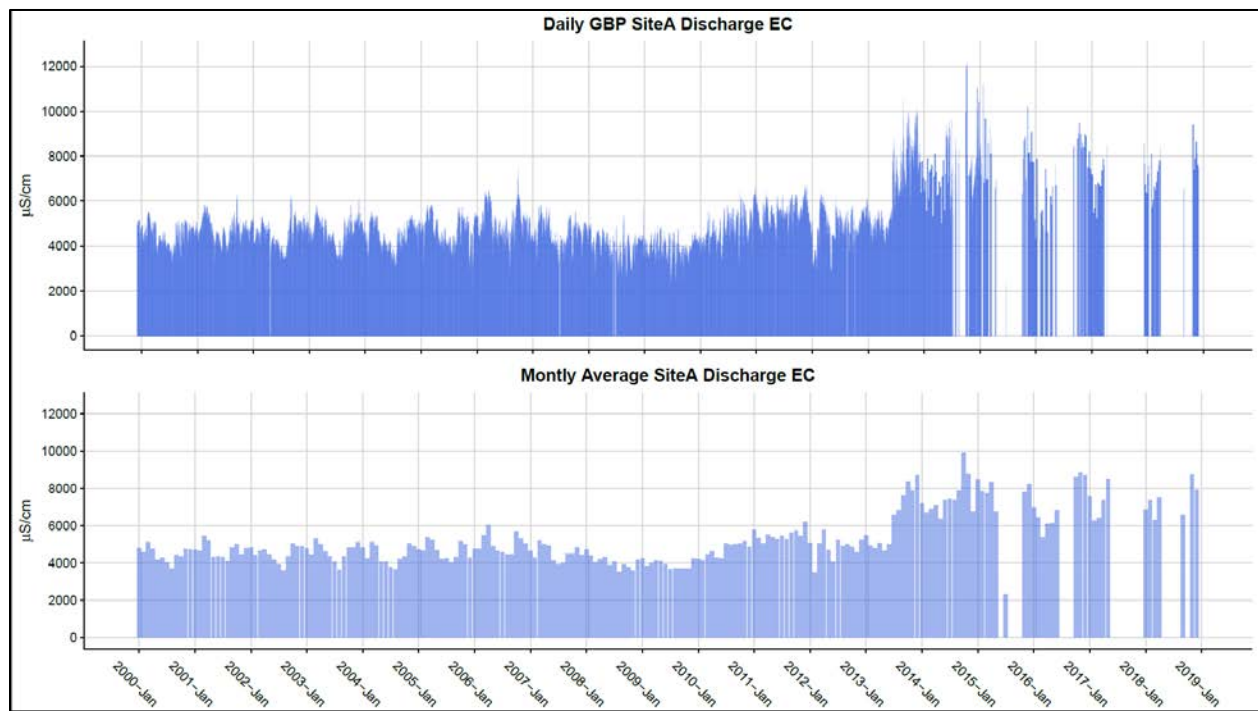


Figure 1 Electrical conductivity (EC) of discharges from Grassland Bypass Project (GBP) (2000 – 2019)

2. A surface water quality management plan should be developed along with the Waste Discharge Requirements.


Tentative Order Term 17 indicates that if the selenium performance target is exceeded, the Dischargers will propose additional management practices. However, it is important to develop a plan in advance instead of waiting until the performance target has been exceeded, because the uncontrollable nature of rain events makes it impossible to entirely cease stormwater discharges from the Project area. More importantly, the uncontrollable nature of rain events makes it critical to implement management practices during the dry season to prevent contaminants from building up in the Project area.

Regarding salinity, the need to develop a salinity management plan is even more critical. The Tentative Order proposes Station R as the compliance point with the Basin Plan receiving water limits in the San Joaquin River before the confluence with the Merced River. Monitoring data showed that the electrical conductivity (EC) at Station R was as high as 4,000 µS/cm in 2015 and 1,700 µS/cm in 2018, exceeding the 1,600 µS/cm EC objective in Basin Plan. Therefore, a management plan should be developed since discharges from the Project have contributed and will continue to contribute to the exceedance of salinity objectives. CCWD is aware of the CV-SALTS effort (Central Valley Salinity Alternatives for Long-Term Sustainability) to develop a valley-wide solution for salt and has participated in the stakeholder process. If dischargers choose the Alternative Permitting Approach through CV-SALTS, they are still required to

maintain their current discharge level. Therefore, the Tentative Order should quantitatively define the current discharge level for the Project. In addition, the management plan should be developed simultaneously to discuss additional practices if salt discharges exceed the applicable limits, and to set up a time schedule for the Project to meet the salinity objectives.

If you have any questions, please do not hesitate to get in touch with Lucinda Shih at (925) 688-8168 or lshih@ccwater.com, or with Yuan Liu at (925) 688-8282 or yliu@ccwater.com. We look forward to continuing to work with you on this important project.

Sincerely,



Leah Orloff
Water Resources Manager

LHS/YL:wec

cc: Ryan Hernandez, Contra Costa County
Gary Bobker, The Bay Institute
Rachel Zwillinger, Defenders of Wildlife

Attachment: CCWD Comment Letter on the Long-Term Storm Water Management Plan for the Grassland Bypass Project 2020–2045



September 13, 2019

Joseph C. McGahan
Drainage Coordinator
San Luis & Delta-Mendota Water Authority
P.O. Box 2157
Los Banos, CA 93635
jmcgahan@summerseng.com

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Subject: Long-Term Storm Water Management Plan for the Grassland Bypass Project 2020–2045

Dear Mr. McGahan:

Contra Costa Water District (CCWD) appreciates the opportunity to comment on the Draft Long-Term Storm Water Management Plan 2020–2045 – Addendum to the Final Environmental Impact Statement/Environmental Impact Report (Final EIS/EIR) for consideration of the Grassland Bypass Project (Draft Addendum) and the associated Initial Study. CCWD has engaged in the stakeholder process that negotiated the previous Agreements for Use of San Luis Drain for the Grassland Bypass Project between the Bureau of Reclamation and the San Luis & Delta Mendota Water Authority (Use Agreements) over the past several decades, and we look forward to continuing our good relationship with the Grassland Area Farmers as we work towards a sustainable storm water management plan.

First, we would like to applaud the Grassland Area Farmers for successfully implementing the Grassland Bypass Project over the past 30 years, which has kept selenium-rich drainage out of the adjacent wildlife area and reduced the discharged selenium load by 96% and salt load by 80%. The significant reduction in discharged contaminants and salt helps protect our precious shared water resources and downstream beneficial uses. The Grassland Bypass Project has proved to be a feasible in-valley solution for agricultural drainage issues and should be used as a model for the entire Central Valley as it is seeking sustainable valley-wide salinity alternatives.

The Final Addendum should include quantifiable constraints to ensure that the trend of selenium and salt discharge reduction is not reversed and loopholes are not created by storm water discharge permits. CCWD also would like to encourage continued efforts towards reaching the goal of “zero discharge” in both selenium and salt as new technologies become available. Addressing the following specific comments in the Final Addendum will ensure that it is adequate under the California Environmental Quality Act.

1. The impacts of storm water discharges with the proposed management plan should be quantified.

The remaining element of drainage management from the Grassland Area, that of storm water management, will be challenging. Due to the uncertainties associated with storm water events, the Initial Study for the Long-Term Storm Water Management Plan did not provide quantitative

evaluation of discharges and water quality impacts with full implementation of the proposed mitigation measures. Instead, the Initial Study used historical data from 2015 to 2018 as a surrogate and assumed the actual impacts in the future would be less. CCWD agrees with the assessment that storm water events are inherently uncertain, but historical precipitation levels over a longer period should be used to estimate discharges in order to analyze likely impacts for a range of flows over different water year types.

2. A storm-driven event should be clearly defined.

The Addendum and the new agreement to use the San Luis Drain beyond 2019 (Storm Water Use Agreement) are only intended to address storm water discharge. The Draft Addendum should include a clear and quantifiable definition of a storm-driven event under which the San Luis Drain would be used. Without a clear definition, it is possible that storm water discharge permits could provide a loophole for discharging agricultural drainage and might create unintended environmental consequences.

3. Seasonal and annual load and concentration limits for selenium and salt should be specified.

The current Agreement for Continued Use of San Luis Drain (Use Agreement) clearly defines milestones to guide continuous reductions in selenium and salt discharges from the Grassland Area. In the Draft Addendum, seasonal and annual load and concentration limits, no greater than the limits for Year 2019 in the current Use Agreement, should be applied. These limits would also provide checkpoints for storm water management in the long term – if the limits are exceeded, the environmental impacts should be re-evaluated, and new actions to keep discharges within the limits should be explored.

4. Details of comprehensive monitoring plans should be added.

The current Use Agreement is implemented with a comprehensive water quality monitoring plan to ensure that the selenium and salt loads are not exceeded and a comprehensive biological monitoring plan to track of the contaminant levels in bird eggs in the area. These monitoring plans are key to measuring the progress of the Grassland Bypass Project and identifying effective drainage management actions and should continue to be implemented under the future Storm Water Use Agreement. Therefore, the Draft Addendum and Initial Study should also include details of comprehensive monitoring plans, as well as monitoring details for the new regulating reservoirs and the expanded reuse area if any.

5. The sustainability of the Reuse Area for the San Joaquin River Improvement Project should be evaluated more closely.

Figure 1 below shows the daily and monthly average salinity of the discharge from the Grassland Bypass Project as electrical conductivity (EC) values for 2000 to 2019. Since 2014, when the discharges to the San Luis Drain were reduced to storm water discharges only, the discharged salinity from the Grassland Area has increased. Although some freshening was observed after wet seasons, the overall salinity was higher post-2014 than pre-2014, when discharges occurred throughout the year. This indicates potential salt accumulation in the

Reuse Area as the discharge flows decrease. If salt keeps accumulating, the discharged salt loads and impacts on downstream water quality could increase, even with the same or lesser discharge flows. It is also possible that salt accumulation in the Reuse Area would impact the continued use of the Grassland Area in the long term, which is key to success of the Grassland Bypass Project. These potential outcomes and impacts need to be more closely evaluated. If needed, more aggressive actions, such as land retirement and desalination, should be considered to achieve salt balance and to obtain sustainability of the Reuse Area without discharging more drainage into the San Luis Drain.

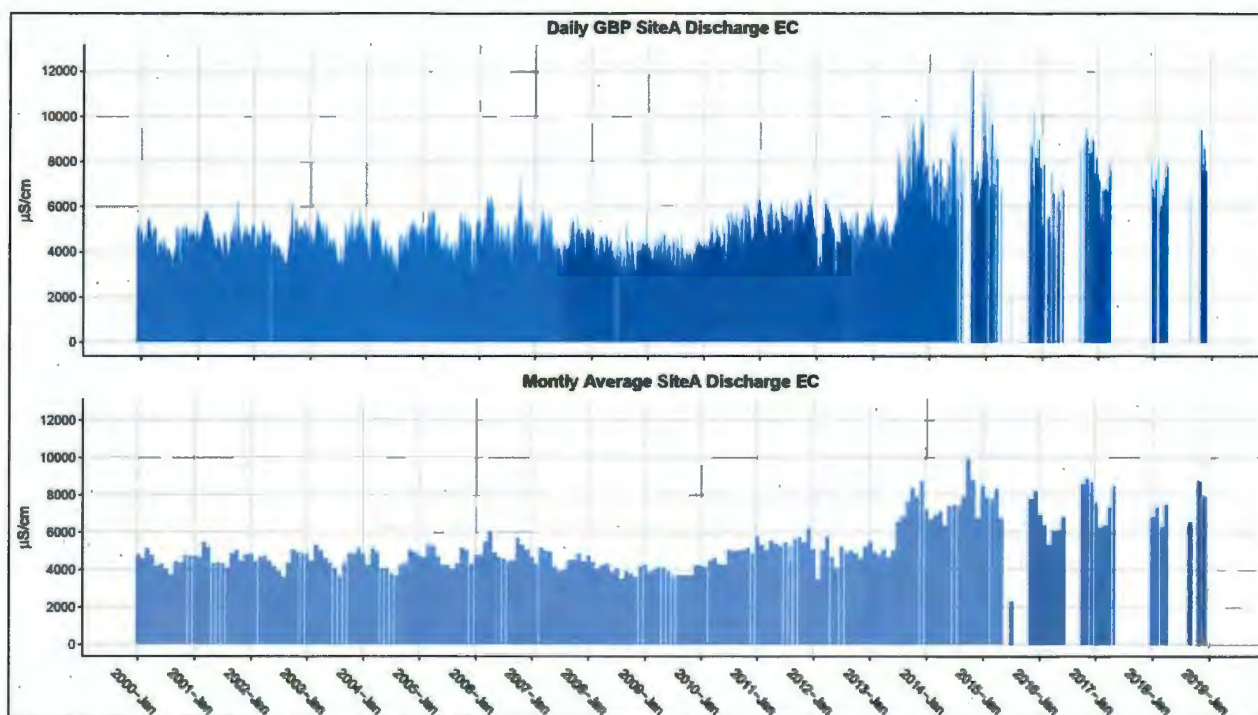


Figure 1 Electrical conductivity (EC) of discharges from Grassland Bypass Project (GBP) (2000 – 2019)

6. The Storm Water Use Agreement must be consistent with the Draft Addendum, and should also reflect the above comments.

It is our understanding that the Storm Water Use Agreement will be negotiated with, and a separate NEPA (National Environmental Policy Act) document prepared by, the Bureau of Reclamation later this year. CCWD appreciates being included in this stakeholder process. However, without the publication of a draft Storm Water Use Agreement, we are not able to review the details of the actual long-term storm water management plan at this time. The Storm Water Use Agreement must be consistent with the Draft Addendum, and both documents should also incorporate our comments in this letter.

Joseph C. McGahan, San Luis & Delta-Mendota Water Authority
Long-Term Storm Water Management Plan for the Grassland Bypass Project 2020-2045
September 13, 2019
Page 4

If you have any questions, please do not hesitate to get in touch with Lucinda Shih at (925) 688-8168 or lshih@ccwater.com, or with Yuan Liu at (925) 688-8282 or ylui@ccwater.com. We look forward to continuing to work with you on this important project.

Sincerely,



Leah Orloff
Water Resources Manager

LHS/YL:wec

cc: Ryan Hernandez, Contra Costa County
Gary Bobker, The Bay Institute
Rachel Zwillinger, Defenders of Wildlife

Comment Letter 6

Department of
Conservation and
Development

Water Agency

30 Muir Road
Martinez, CA 94553

Phone: 925-674-7824

Contra Costa County

John Kopchik
Director



December 23, 2019

Ernest Conant
Regional Director
U.S. Bureau of Reclamation
California-Great Basin Regional Office
2800 Cottage Way
Sacramento CA 95825-1898

Rain Emerson
Environmental Compliance Branch Chief
U.S. Bureau of Reclamation, South-Central
California Area Office
1243 N Street, Fresno, CA 93721
Email: remerson@usbr.gov

Re: Draft Environmental Assessment for a 10-Year Use Agreement for the San Luis & Delta-Mendota Water Authority's Long-term Storm Water Management Plan for the Grasslands Drainage Area

Dear Director Conant and Ms. Emerson,

Contra Costa County (County) appreciates this opportunity to review this Draft Environmental Assessment (EA-19-029) for a 10-Year Use Agreement for the San Luis Drain for limited discharge of storm-induced flows. The U.S. Bureau of Reclamation (Reclamation) proposes to allow the San Luis & Delta-Mendota Water Authority (SLDMWA) to continue to introduce and convey up to 150 cubic feet per second of storm-induced flows through the San Luis Drain, consistent with permitting from the Central Valley Regional Water Quality Control Board (RWQCB), for a ten-year period. According to Reclamation, the intent of this proposal is to prevent storm-induced flows from the Grassland Drainage Area (GDA) from impacting wetlands, infrastructure, and agricultural areas within and outside the Grassland Drainage Area.

Contra Costa County covers a large area within the Sacramento-San Joaquin Delta (Delta). The County borders on Old River to the east and Suisun and San Pablo Bays in the north. The County is the ninth most populous county in California, with more than one million residents. Many of our residents rely on the Delta for their municipal, industrial and irrigation water supplies, for their livelihood, and recreation. The quality of Delta water, health of the Delta ecosystem, Delta recreation and water supply are, therefore, of major importance to the County and its residents.

The County, along with other Delta and San Francisco Bay stakeholders, played an important role in development of the first Grassland Bypass Project (GBP) Use Agreement in 1995 and the subsequent 2001 and 2009 Use Agreements. The County provided detailed comments on the associated environmental documents and waste discharge requirements (see Attachments B and C to this letter).

Reclamation's failure to include longstanding Delta and Bay stakeholders in development of the Environmental Assessment and the corresponding new Use Agreement is disappointing. Contra Costa County requests that additional time, of order 3 months or more, be set aside to allow these stakeholders to participate in the development of a more detailed Use Agreement that sets more specific parameters regarding water quality and environmental and habitat protection goals, monitoring requirements, and consequences for failing to meet these goals.

In Attachment A, we provide a more detailed account of our consistent requests to participate in this process dating back to at least early 2017, well in advance of the current December 31, 2019 termination date.

Nonetheless, the County appreciates the efforts of the Grassland area farmers, since 1996, to significantly reduce their discharges of selenium and salinity to the San Joaquin River. Over the last 23 years, the GBP has succeeded in reducing the volume of agricultural drainage water discharged from the Grassland Drainage Area by over 90%, resulting in substantial environmental improvements to wetlands water supply channels and the San Joaquin River. The GBP is a nationally-recognized model for how to address contaminated drainage and protect environmental resources. The County wants to make sure that the GBP Use Agreement contain sufficient terms and monitoring requirements to ensure that stormwater discharges through the Drain are as infrequent as possible and do not contribute to water quality and other environmental impacts downstream.

Discharges from the Grassland area into the San Joaquin River will increase salinity and selenium concentrations. The contaminants continue down to the Delta and can cause increases in salinity concentrations in the vicinity of Contra Costa Water District's (CCWD) urban water intakes, and impact the drinking water quality for the residents of Contra Costa County.

The County's residents are CCWDs customers; therefore, we share CCWD's concerns regarding meeting its drinking water quality delivery goals. The SWRCB's daily Municipal & Water Quality standard is 250 mg/L chloride concentration, year round. However, this SWRCB standard corresponds to water with a very salty taste and results in corrosion problems for drinking water supply systems and industry. To address these problems, CCWD operates to a delivered water quality goal with a much lower salinity and has invested well over 1 billion dollars in building Los Vaqueros Reservoir and other associated infrastructure and treatment facilities. Any increase in salinity at CCWD's Old River or Victoria Canal intakes has the potential to significantly impact CCWD's ability to meet its drinking water quality goals, and impacts the reliability of its investments. Increased concentrations of San Joaquin River

contaminants also have the potential to adversely impact the health and safety of the residents of the 23 million other people that rely on the Delta as their source for drinking water.

High selenium loads into the San Joaquin River and Delta will impact key fish species and can contribute to deformities, mortality and reduced abundance of these threatened and endangered species. More stringent biological opinions and Delta operations criteria resulting from these fish impacts, can lead to further restrictions on the ability of CCWD to divert water from the Delta for use by the residents of Contra Costa County.

The County remains ready to participate in detailed negotiations for a new Use Agreement for stormwater discharges that will prevent any backsliding of the current low levels of selenium and salt loading into the San Joaquin River and the Delta. The goal should continue to be eventual achievement of zero discharges for stormwater.

The County has the following comments on the Draft Environmental Assessment for a new Grassland Bypass Project Use Agreement.

1. The Draft EA does not include a copy of the proposed new Use Agreement

The County and other stakeholders and the general public should not have been asked to review an environmental assessment and analysis of a Use Agreement they have not seen. The EA was posted on Reclamation's website on December 9, but the County was not notified of that posting. The deadline for comments is December 23 (only a 14-day review period).

The three previous Use Agreements (November 1995, September 2001, December 2009) were a crucial part of the success of the GBP. They placed clear and detailed limits on the discharge operations through the San Luis Drain and established incentives for operating within those constraints. The result was significant reductions in the discharge of selenium and salinity to the San Joaquin River.

A draft copy of the proposed Use Agreement (12-19-2019 Draft) was emailed to the County by Reclamation late on December 19, 2019 (only 4 days before the comment deadline for the Environmental Assessment). The County's detailed initial comments on this draft Use Agreement are outlined in Attachment A to this letter.

The draft EA is inadequate because it failed to include a copy of the proposed new Use Agreement. A new EA must be prepared that incorporates the Use Agreement and released for public review and comment.

2. The draft EA is inadequate because it fails to analyze and disclose the potential significant adverse water quality impacts of stormwater discharges

The draft EA fails to include a detailed modeling study of the proposed future use of the Drain for stormwater discharges and fails to disclose the potentially significant adverse water quality impacts with respect to selenium, salinity and other contaminants.

The only attempt at an analysis appears on page 28 of the draft EA:

Despite the fact that water quality over the 10-year period of this action are anticipated to be similar to what has occurred since 2015, dependent on hydrologic conditions, and is not expected to adversely impact water quality or beneficial uses, Reclamation has included additional monitoring and reporting actions in the 10-year Proposed Action.

This is clearly not adequate. The fact that agricultural drainage will build up in the Grassland Drainage area once use of the Drain is prohibited and there are likely to be more extreme storms as a result of global climate change, flows and water quality over the next 10 years are not likely to be similar to the previous 10 years.

A detailed simulation of the amount of excess stormwater remaining after filling the existing and new storage basins, and releasing stormwater to the San Joaquin River Water Quality Improvement Project (SJRIP) when soils are not completely saturated needs to be carried out. Similarly, the discharge of excess stormwater from the Grassland area through the Bypass should also be modeled over a range of historical rainfall events.

The Use Agreement should specify detailed (daily) monitoring of key flow and water quality parameters within the Drain and downstream of the Drain and in the San Joaquin River to verify these analyses and inform calibration of future modeling of the stormwater discharges.

A revised EA must be prepared that includes detailed modeling of selenium and salinity (EC) concentrations in the Drain and Mud Slough as a result of probable extreme storm events (taking into account the effects of global climate change). The new EA should then be released for public comment and review.

3. The draft EA and Use Agreement are inadequate because they fail to require protective selenium objectives for Mud Slough downstream of the Drain

Under the description of the Proposed Action on pages 7-8 of the draft EA, the conservation measures to be implemented by the Authority and the Grassland Area farmers to minimize or avoid adverse impacts to water quality include:

- *A 5 µg/L, 4-day average and 20 µg/L selenium, maximum water quality objective shall be implemented for discharges to Mud Slough (North) and the San Joaquin River from the Mud Slough confluence to the Merced River.*

- *A 2 µg/L selenium, monthly mean, and 20 µg/L selenium, maximum shall be implemented for Salt Slough and for the water supply channels in the Grassland Watershed.*

The 2 µg/L limit for Salt Slough is appropriate because, as a result of the successful GBP, agricultural drainage is no longer discharged to Salt Slough. Because the discharge of agricultural drainage to Mud Slough is also prohibited after December 31, 2019, Contra Costa County requests that the same 2 µg/L selenium limit also be required in the new Use Agreement for Mud Slough.

The 5 µg/L selenium limit above is for the section of the San Joaquin River from the confluence with Mud Slough down to the confluence with the Merced River. This is not protective of fish and wildlife in Mud Slough itself.

An exemption to the 2 µg/L selenium limit for Mud Slough could be allowed during well-defined stormwater discharge events, but the goal should be to make operational and infrastructure changes within the Grassland Drainage area so that the 2 µg/L selenium limit can eventually be met at all times.

4. The draft EA is inadequate because it fails to analyze and disclose the effect of selenium discharges from the Grassland Drainage area on fish and wildlife in the Delta

A recent study by National Marine Fisheries Service¹ observed deformed fish in the Delta in 2011 (a wet year), with data suggesting that elevated selenium concentrations in San Joaquin River during storm events were a potential cause for the fish deformities. As the Grassland Bypass Project has been a major source of selenium to the San Joaquin River and future discharges are being proposed during storm events, a revised EA needs to be prepared that includes an analysis and disclosure of the bioaccumulation of selenium in the south and central Delta. The new draft EA should then be released for public review and comment.

5. The monitoring schedule in the draft EA fails to include salinity monitoring

The monitoring schedule described on page 11 of the draft EA fails to include any monitoring for salinity, typically carried out in the form of specific electrical conductivity (EC). The monitoring schedule for the proposed stormwater discharge project must include weekly EC monitoring under normal (non-storm conditions) and daily monitoring during storm events and for a week after the end of stormwater discharges.

The draft EA on page 26 does note that:

Explicit salinity limits are not included in the WDR for the GBP. The Basin Plan requires that dischargers must: 1) participate in a Regional Board approved real-time

¹ Rachel Johnson, Standing Too Close to the Elephant: Addressing Scales in Restoration and Fisheries Conservation, presentation at the 14th Biennial State of the San Francisco Estuary Conference

management program; or 2) submit a management plan that is designed to meet the Base Salt Load Allocations per the Basin Plan. The GAF are currently part of the board-approved real-time management program.

The new Use Agreement should continue to require reporting of monthly and annual salt loads from the GBP, consistent with the Third Use Agreement (2010-2019). Annual reports must continue to be published and include the monitoring data specifically required under the new Use Agreement as well as data collected by overlapping organizations, for example, for the Irrigated Lands Regulatory Program by the Westside San Joaquin River Watershed Coalition.

During storm events, the GBP monitoring should also include Site C, in Mud Slough upstream of the Drain. This will provide a check on the quantity and quality of water also entering Mud Slough from other sources.

Reclamation should also consider requiring that at least once monthly and once during storm events, the monitoring should also include collection of a water samples, laboratory filtered, that would be analyzed for other water quality constituents: total dissolved solids, chloride, sodium, calcium and sulfate. This will help identify if there is any change in the sources of the salts in the discharged stormwater, *i.e.*, identify if there is any change in the relative proportions of ions in the discharge. For example, seawater which is included in irrigation water exported from the Delta to the Grassland Drainage area has different proportions of ions (higher chloride, lower sulfate) than agricultural drainage (lower chlorides, higher sulfates).

6. The release of the draft EA was premature because consultations with fish agencies were incomplete

The draft EA on pages 31-32, states that consultation with fish agencies regarding the Endangered Species Act (16 U.S.C. § 1531 et seq.) and Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 et seq.) have not been completed. The County requests that the public be notified and provided with the fish agency findings once they are complete. The County and the public should be allowed to comment on these findings before the EA is completed.

7. The term of the proposed Use Agreement is too long

The draft EA analyzes a 10-year agreement. Because the adverse impacts of the proposed stormwater discharge project are difficult to predict, the County requests that the term of the new stormwater Use Agreement initially be only **2 years**. This will allow additional terms and conditions to be added to the Use Agreement if the environmental impacts are worse than simulated.

Ernest Conant and Rain Emerson

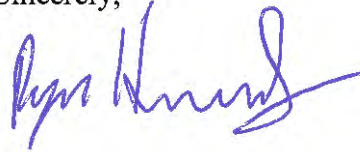
Draft EA for 10-Year Use Agreement for SLDMWA's Long-term Stormwater Management Plan for GDA

December 23, 2019

Page 7

Thank you for considering Contra Costa County's comments on the Draft Environmental Assessment of the 10-Year Use Agreement. County staff is available to answer any questions you may have and to provide further input on this project. Please contact me at (925) 674-7824.

Sincerely,



Ryan Hernandez, Manager
Contra Costa County Water Agency

cc: John Kopchik, Director Conservation and Development
Maureen Toms, Deputy Director, Conservation
Lucinda Shih, Contra Costa Water District
Gary Bobker, The Bay Institute
Rachel Zwillinger, Defenders of Wildlife

Attachments

- A. Contra Costa County comments on the 12-19-2019 Draft San Luis Drain 4th Use Agreement
- B. Contra Costa County comments on the Addendum to the Final EIS/EIR for Grassland Bypass Project, dated September 13, 2019
- C. Contra Costa County comments to the Central Valley Regional Water Quality Control Board regarding waste discharge requirements for surface water discharges from the Grassland Bypass Project, dated November 6, 2019

**Contra Costa County comments on the 12-19-2019 Draft San Luis Drain
4th Use Agreement**

**1. Reclamation failed to get our stakeholder input into development of the 4th
Use Agreement despite our requests as early as February 2017**

Representatives of Contra Costa Water District, Contra Costa County, the Bay Institute and other environmental organizations (in particular, the Environmental Defense Fund) played a crucial role in development of the three previous Use Agreements for the 28-mile completed section of the San Luis Drain. These organizations supported the Grassland Area drainers successful efforts to reduce their selenium and salt load discharges to the San Joaquin River and deserve a little credit for the success of the Grassland Bypass Program. These key Delta and San Francisco Bay interests therefore had a real interest and expectation they would also be involved in developing a new Use Agreement.

David Cory, on behalf of the Grassland Area drainers, reached out to Contra Costa County, Contra Costa Water District, and the Bay Institute (Gary Bobker) by email on February 10, 2017 inviting us to participate in discussions about their plan to deal with stormwater flows after the term of the 3rd Use Agreement.

Contra Costa County and other Delta and San Francisco Bay interested parties, through our joint attorney, Hal Candee, first asked Reclamation to include us in negotiations in early 2018. In a May 5, 2018 email, Alicia Forsythe (Deputy Regional Director, Mid Pacific Region) stated that she had talked to [Reclamation's] Fresno team and they should be in contact with [Hal] shortly to schedule a call on the Fourth Use Agreement.

Joe McGahan, on behalf of the drainers, did email the County a draft copy of a new Use Agreement on March 31, 2019 (3-15-19 Draft). The County did respond with initial comments on that draft but never received a revised draft or response to our concerns. We received nothing until, pursuant to our recent request, we received the 12-19-2019 Draft from Michael Jackson by email just before noon on December 19 (only 4 days before the comment deadline for the Environmental Assessment).

Reclamation's failure to include key Delta and Bay stakeholders in development of the new Use Agreement and the corresponding Environmental Assessment is disappointing. Contra Costa County requests that additional time, of order 3 months or more, be set aside to allow these stakeholders to participate in negotiations to develop a more detailed Use Agreement that sets more specific parameters regarding water quality and environmental and habitat protection goals, monitoring requirements, and consequences for failing to meet these goals.

As was the case with the previous, successful, Use Agreements, Reclamation should not rely on the Regional Water Quality Control Board's basin-wide plans and other regulatory agencies to determine the specific needs to control the quantity, quality and environmental impacts of discharges from the Grassland Drainage area.

The other concerns discussed below, and the details regarding a 3-6 month interim Use Agreement, should be addressed as part of negotiations involving Reclamation, the drainers and the Delta and Bay stakeholders.

2. The Monitoring and Reporting requirements in the draft Use Agreement are inadequate

The draft Use Agreement under Monitoring and Reporting, vaguely states:

The Authority shall be responsible for implementing a comprehensive monitoring program that meets the following objectives:

- 1. To provide water quality data for purposes of determining the Draining Parties' compliance with water quality objectives under the WDRs issued for this Agreement;*
- 2. To provide data on sediment levels, distribution, and selenium content; and*
- 3. To provide any additional data as required by local, state, and federal law.*

The draft Use Agreement must clearly specify the key stations where monitoring must be carried out on a daily and weekly basis, the parameters and constituents that must be monitored (such as flow, and selenium, salinity, boron, molybdenum and nitrate concentrations in surface waters, as well as selenium concentrations in birds eggs and fish tissues). The draft EA on page 8 does list specific monitoring site locations. These must be included in the draft Use Agreement as official requirements during the term of the agreement. That will ensure this monitoring will continue even if a future RWQCB decides to reduce its monitoring requirements.

The effects of salinity discharges from the Drain on the quality of the source of drinking water in the south and central Delta is a particular concern to the residents of Contra Costa County and the customers of CCWD.

A major goal of the Grassland Bypass Project was to reduce and eventually eliminate discharges to Mud Slough, Salt Slough and the San Joaquin River by December 31, 2019. If Reclamation approves any discharges beyond that date, even if only stormwater discharges, they should be monitored in as much detail, if not more detail, than for the previous Use Agreements.

A recent study by National Marine Fisheries Service¹ observed deformed fish in the Delta in 2011 (a wet year), with data suggesting that elevated selenium concentrations in San Joaquin River during storm events were a potential cause for the fish deformities. As the Grassland Bypass Project has been a major source of selenium to the San Joaquin River and future discharges are being proposed during storm events, the new Use Agreement should also include

¹ Rachel Johnson, Standing Too Close to the Elephant: Addressing Scales in Restoration and Fisheries Conservation, presentation at the 14th Biennial State of the San Francisco Estuary Conference

a requirement to participate in monitoring of selenium concentrations and fish tissue in the south and central Delta.

Based on the results of this fish tissue monitoring, additional selenium management actions may be needed to address the bioaccumulation of selenium in the downstream ecosystem.

The draft Use Agreement under Monitoring and Reporting, under B, states:

B. The Authority shall be responsible for implementing this monitoring program; provided that, nothing contained in this Agreement is intended to extend monitoring requirements downstream of Crows Landing ("Site N") on the San Joaquin River.

This section should be deleted and replaced with a specific term requiring that the drainers contribute to studies of the effect of selenium discharges to the San Joaquin River on fish species and water quality in the Sacramento-San Joaquin Delta and San Francisco Bay.

3. The Use Agreement needs to define the term "Downstream Users"

The Use Agreement under F, Environmental Commitments, refers to notifying Downstream Users and making flow and monitoring data available to downstream entities that have requested them. The term "Downstream Users" should be specified under I, Definitions and Referenced Terms, and at a minimum include Contra Costa County, Contra Costa Water District, the Bay Institute and other downstream users of water and their advocates (in the case of fish and wildlife species).

4. The consequences of exceeding the 150 cfs flow limit in the San Luis Drain should be specified in the Use Agreement

The Use Agreement under IX, Miscellaneous, term B, states:

Reclamation will not use or authorize the use of the Drain in such a manner as to reduce the Authority's use of the Drain with an authorized maximum flow of 150 CFS of stormwater.

The Use Agreement must specify consequences such as prohibition of further use of the San Luis Drain if this flow limit or other water quality targets are exceeded.

5. The Use Agreement must include a 2 ppb selenium concentration limit for Mud Slough downstream of the terminus of the Drain (Site D)

Cessation of the discharge of agricultural drainage from the Grassland Drainage area into Salt Slough has enabled a 2 ppb selenium concentration limit to be achieved and fish and wildlife to be protected in that area. Because the discharge of agricultural drainage into Mud Slough is

prohibited after December 31, 2019, the Use Agreement should also impose a 2 ppb selenium concentration limit for Mud Slough.

This is not something that can be left to the Regional Water Quality Control Board as it is not yet in the Board's Basin Plan or Waste Discharge Requirements for the Grassland Bypass Project. However, a 2 ppb selenium limit is consistent with the original goal of the Project and should be honored.

The Use Agreement could include an exception to this 2 ppb limit during official storm-discharge events and shortly after.

6. Unlike the three previous Use Agreements, the new Use Agreement does not include any load limits for selenium and salt

The three previous Use Agreements and dedicated work by the drainers have resulted in dramatic in the annual selenium loads from the Grassland Bypass drainage area. Historical monthly salt loads, measured at Station B at the terminus of the Bypass, also decreased until about 2013. However, after that, the monthly salt loads again increased.

This is a cause for concern to Contra Costa County and CCWD. The new Use Agreement should again set a salt load or salinity concentration (EC) limit in Mud Slough to ensure that future discharges of stormwater do not continue to increase.

In the County's November 6, 2019 comments to the Central Valley RWQCB regarding waste discharge requirements for surface water discharges from the Grassland Bypass Project, the County requested that the GBP WDR include a salinity limit in Mud Slough downstream of the terminus of the Bypass (station D) of 3,000 $\mu\text{S}/\text{cm}$, as a 14-day average, but gradually reduce to 1,600 $\mu\text{S}/\text{cm}$ after 5 years. A 14-day EC limit of 3,000 $\mu\text{S}/\text{cm}$ is achievable at station D.

The County requests that Reclamation include a limit on EC at station D in the new Use Agreement to provide a necessary incentive to avoid salinity build up in soils and the reuse area prior to storms.

7. The Use Agreement fails to properly define and regulate stormwater events

The draft Use Agreement under Section II, Permits and Responsibilities, B, Discharges into and from the Drain, states:

*The Authority shall be responsible for ensuring that **only Stormwater Flows** enter the Drain, and that such Stormwater Flows are controlled and monitored to ensure that their quality and composition comply with this Agreement and all applicable federal, state and local standards, requirements, regulations and laws.*

Appendix F (High Rainfall Exemption) of the January 2010 – December 2019 Agreement for Continued Use of the San Luis Drain (Agreement No. 10-WC-20-3975) on page 36 specifies the

high rainfall conditions under which the drainers would be given an exemption for their selenium discharges. The same principle should apply to the new stormwater Use Agreement. Discharge of water through the Drain outside of those events would be prohibited. Exceedance of a 2 ppb selenium limit (see #5 above) outside of a stormwater event would have consequences.

Department of
Conservation and
Development

Water Agency

30 Muir Road
Martinez, CA 94553

Phone: 925-674-7824

Contra Costa County

John Kopchik
Director



September 13, 2019

Joseph C. McGahan
Drainage Coordinator
San Luis & Delta-Mendota Water Authority
P.O. Box 2157
Los Banos, CA 93635
Email: jmcgahan@summerseng.com

Re: Contra Costa County comments on Addendum to the Final EIS/EIR for Grassland Bypass Project

Dear Mr. McGahan,

Contra Costa County appreciates this opportunity to formally review the draft Addendum to the Final Environmental Impact Statement/Environmental Impact Report (Final EIS/EIR) for consideration of the Grassland Bypass Project (GBP) prepared by the San Luis & Delta Mendota Water Authority (SLDMWA) and released on August 14, 2019.

The Final EIS/EIR was certified by the SLDMWA on October 8, 2009 (SCH #2007121110). The 2009 Final EIS/EIR addressed the potential environmental effects/impacts that would result from implementation of a new Use Agreement for the GBP that allowed for continued use of the Federal San Luis Drain (Drain) for the period 2010 through 2019 for discharge of agricultural drainwater and storm water into Mud Slough (North) and of drainwater reuse at an expanded San Joaquin River Improvement Project (SJRIP). The Addendum evaluates modifications to the GBP and continued operation and management of the Drain and related improvements at the SJRIP for the next 25 years.

The U.S. Bureau of Reclamation (Reclamation) is apparently managing compliance with the National Environmental Policy Act (NEPA) for continued use of the Drain separate from this California Environmental Quality Act (CEQA) Addendum.

Contra Costa County covers a large area within the Delta. The County borders on Old River to the east and Suisun and San Pablo Bays in the north. The County is the ninth most populous county in California, with more than one million residents. Many of our residents rely on the Delta for their municipal, industrial and irrigation water supplies, for their livelihood, and

recreation. The quality of Delta water, health of the Delta ecosystem, Delta recreation and water supply are, therefore, of major importance to the County and its residents.

Discharges from the Grassland area into the San Joaquin River will reach the Sacramento-San Joaquin Delta (Delta) and affect salinity and selenium concentrations there. They have the potential to adversely impact the health and safety of the residents of Contra Costa County and the 23 million other people that rely on the Delta as their source for drinking water. High selenium loads into the San Joaquin River and Delta will also impact key fish species. This can lead, through biological opinions and Delta operations criteria, to more stringent restrictions on the ability of urban agencies to divert water from the Delta to meet their water supply needed.

The County appreciates the efforts of the Grassland area farmers, since 1996, to significantly reduce their discharges of selenium and salinity to the San Joaquin River. Over the last 32 years, the Grassland Bypass Project has succeeded in reducing the volume of agricultural drainage water discharged from the Grassland Drainage Area by over 90%, resulting in substantial environmental improvements to wetlands water supply channels and the San Joaquin River. The GBP is now highly likely to achieve its goal of eliminating all discharges of agricultural drainage by December 31, 2019. The GBP is a nationally-recognized model for how to address contaminated drainage and protect environmental resources.

The adequacy of the Draft Addendum may be addressed by taking action on the following comments.

- 1. The Addendum must include a copy of the proposed Use Agreement under which the Grassland Bypass would be operated after December 31, 2019 when the existing Use Agreement expires.**

The Draft Addendum, on page 3-1, acknowledges that the proposed project would be implemented through a new Use Agreement with the Bureau of Reclamation for use of the Drain and with new Waste Discharge Requirements (WDR) from the Central Valley RWQCB for discharge to Mud Slough (North).

The previous Use Agreements for the Grassland Bypass Project provided detailed requirements regarding selenium and salt load limits and monitoring. Any extension of use of the San Luis Drain beyond December 31, 2019 should require similar definitions, environmental commitments, and restrictions to protect the water quality for fish and wildlife in Mud Slough and the San Joaquin River and users of water from the Sacramento-San Joaquin Delta.

Since the new Use Agreement will be a federal document, the CEQA lead agency may consider that the Use Agreement be controlled by Reclamation through a separate NEPA process. However, the Use Agreement is needed to memorialize how the GBP will be operated by the Grassland area farmers and should be included in this CEQA Addendum.

2. The Addendum must describe in detail a Monitoring Plan to monitor key selenium, salinity, boron concentrations and flow discharges into the Bypass and at downstream locations.

The previous Use Agreements for the GBP included comprehensive multiagency monitoring programs to ensure that environmental commitments were being met, selenium and salinity loads are not excessive, and allow problem areas to be identified. A detailed monitoring plan should be incorporated in to the new Use Agreement and Addendum.

3. The Addendum must provide a definition of a stormwater-driven event.

Appendix F (High Rainfall Exemption) of the January 2010 – December 2019 Agreement for Continued Use of the San Luis Drain (Agreement No. 10-WC-20-3975) on page 36 specifies the high rainfall conditions under which the Grassland area drainers would be given an exemption for their selenium discharges.

The Addendum evaluates continued use of the San Luis Drain at its current capacity (150 cfs) combined with the use of existing and new short-term storage basins to reduce storm-induced discharges to Mud Slough (North) in the San Luis National Wildlife Refuge and the California Fish and Wildlife Service China Island Refuge.

The same concept needs to be used for the proposed continued use of the Bypass for excess stormwater discharge. The Addendum and new Use Agreement must include well-defined limits on when discharges can be made through the Drain to ensure that selenium-laden water is only discharged into Mud Slough and the San Joaquin River when there is a high rainfall event and there is more runoff than can be handled by short-term storage basins and the enlarged reuse area.

4. The Addendum must set salinity load limits for the proposed stormwater discharge project.

The current 2010-2019 Use Agreement includes salinity load targets. These were intended to avoid a situation where actions taken by the drainers successfully removed selenium from the agricultural drainage but were less successful in removing salinity. Selenium goals could be met and still result in an increase in salinity concentrations and loads in the Bypass.

The Central Valley RWQCB adopted WDR that set salinity targets at Crows Landing in the San Joaquin below the Merced and at Vernalis. However, the intent of the existing 2010-2019 Use Agreement was to reduce and eventually eliminate the contribution of the Grassland area discharges to salinity in the San Joaquin River and Delta. Any “assimilative capacity” available under the RWQCB’s WDR should not be used as an opportunity to increase salinity discharges from the Grassland drainage area.

At the very least, EC limits should be set for discharges from the Bypass that are equivalent to the proposed objective of 3 ppb Selenium (LTSWMP Initial Study, page 1-14) so that the discharge of salinity is also limited.

The Central Valley RWQCB recently adopted Salt and Nitrate amendments to the Basin Plan that allow upstream San Joaquin River salinity discharges at concentrations that are higher (1,600 and 2,200 $\mu\text{S}/\text{cm}$) than the State Water Resources Control Board's (SWRCB) south Delta agricultural water quality standards (1,000 $\mu\text{S}/\text{cm}$ and formerly 700 $\mu\text{S}/\text{cm}$ for April-August) and the recommended Secondary Maximum Contaminant Level (SMCL) for the protection of a municipal beneficial use of 900 $\mu\text{S}/\text{cm}$ (as an annual average).

On December 12, 2018, the SWRCB adopted Resolution No. 2018-0059 and relaxed the Water Rights Decision 1641 south Delta agriculture standard for April-August from 700 $\mu\text{S}/\text{cm}$ to 1,000 $\mu\text{S}/\text{cm}$. This allows degradation of water quality in the south Delta in direct conflict with the state Antidegradation Policy (SWRCB Resolution No. 68-16) and the federal Antidegradation Policy (40 C.F.R. §131.12), as well as California Water Code §85020(e) which states that:

The policy of the State of California is to achieve the following objectives that the Legislature declares are inherent in the coequal goals for management of the Delta: ...

*(e) **Improve water quality** to protect human health and the environment consistent with achieving water quality objectives in the Delta.*

The County requests that the Addendum and new Use Agreement establish specific seasonal and annual selenium, salinity and boron load and concentration goals for Mud Slough as part of the continued use of the Grassland Bypass rather relying the Central Valley RWQCB (through CV-SALTS) or the SWRCB to establish protective objectives for this area.

5. The Addendum must provide detailed modeling of the future changes in salinity and selenium in Mud Slough and downstream, and the corresponding loads, as a result of the proposed stormwater discharges.

The Initial Study appears to rely on the analysis in Section 2.10 (Hydrology and Water Quality) to determine that the proposed project will have a less-than-significant impact to Mud Slough, and, therefore, states that no new mitigation measures are required. However, the Initial Study appears to rely on historical data with no computer simulations, and assumed future impacts will be less than historical.

A simulation of the amount of excess stormwater remaining after filling the existing and new storage basins and releasing stormwater to the SJRIP when soils are not completely saturated should be completed. The discharge of excess stormwater from the Grassland area through the Bypass should also be modeled over a range of historical rainfall events. This would disclose more specifically whether there will be any adverse environmental effects on Mud Slough, the San Joaquin River and the Delta.

Contra Costa County comments on Addendum to the Final EIS/EIR for the Grassland Bypass Project
September 13, 2019
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Thank you for considering Contra Costa County's comments on the Draft EIS. County staff and consultants are available to answer any questions you may have and to provide further input on this project. Please contact me at (925) 674-7824.

Sincerely,



Ryan Hernandez, Manager
Contra Costa County Water Agency

cc: John Kopchik, Director Conservation and Development
Leah Orloff, Contra Costa Water District
Gary Bobker, The Bay Institute
Rachel Zwillinger, Defenders of Wildlife

**Department of
Conservation and
Development**

Water Agency

30 Muir Road
Martinez, CA 94553

Phone: 925-674-7824

**Contra
Costa
County**



John Kopchik
Director

November 6, 2019

Central Valley Regional Water Quality Control Board
11020 Sun Center Drive #200
Rancho Cordova, CA 95670
Attention: Sue McConnell
Sue.McConnell@waterboards.ca.gov

Re: Waste Discharge Requirements for Surface Water Discharges from the Grassland Bypass Project

Dear Ms. McConnell:

Contra Costa County has reviewed the tentative Waste Discharge Requirements (WDR) for Surface Water Discharges from the Grassland Bypass Project (GBP) in Merced and Fresno Counties that were released for public review on October 7, 2019. The WDR will be for the proposed periodic use of the Federal San Luis Drain (Drain) beyond December 31, 2019 for the discharge of storm water into Mud Slough (North) and then into the San Joaquin River.

This proposed project requires a new Use Agreement from the U.S. Bureau of Reclamation (Reclamation) as well as compliance with the National Environmental Policy Act (NEPA) and federal Endangered Species Act. These are still being prepared and are unlikely to be completed until early in 2020. The project will also need compliance with the California Environmental Quality Act (CEQA) and California Endangered Species Act (CESA).

Contra Costa County covers a large area within the Sacramento-San Joaquin Delta (Delta). The County borders on Old River to the east and Suisun and San Pablo Bays in the north. The County is the ninth most populous county in California, with more than one million residents. Many of our residents rely on the Delta for their municipal, industrial and irrigation water supplies, for their livelihood, and recreation. The quality of Delta water, health of the Delta ecosystem, Delta recreation and water supply are, therefore, of major importance to the County and its residents.

The County appreciates the efforts of the Grassland area farmers, since 1996, to significantly reduce their discharges of selenium and salinity to the San Joaquin River. The County was fully engaged in development of the first Grassland Bypass Project Use Agreement in 1995 and the subsequent 2001 and 2009 Use Agreements, as well as providing detailed comments on the

associated environmental documents and waste discharge requirements. As discussed below, the County is particularly concerned that the Regional Board is considering adopting a new WDR before Reclamation has prepared and finalized a new Use Agreement for operation of the Bypass beyond December 31, 2019. Without a fully executed Use Agreement, the stormwater discharges and associated environmental impacts cannot be fully defined.

Over the last 32 years, the GBP has succeeded in reducing the volume of agricultural drainage water discharged from the Grassland Drainage Area by over 90%, resulting in substantial environmental improvements to wetlands water supply channels and the San Joaquin River. The GBP is a nationally-recognized model for how to address contaminated drainage and protect environmental resources. The County wants to make sure that the WDR contain sufficient permit terms and monitoring requirements, and incentives, to ensure that stormwater discharges through the Drain are as infrequent as possible and do not contribute to water quality and other environmental impacts downstream.

Discharges from the Grassland area into the San Joaquin River will increase salinity and selenium concentrations. The contaminants continue down to the Delta and can cause increases in salinity concentrations in the vicinity of Contra Costa Water District's (CCWD) urban water intakes, and impact the drinking water quality for the residents of Contra Costa County.

The County's residents are CCWDs customers; therefore, we share the District's concerns in meeting its drinking water quality delivery goal. The SWRCB's daily Municipal & Water Quality standard is 250 mg/L chloride concentration, year round. However, this SWRCB standard corresponds to water with a very salty taste and results in corrosion problems for drinking water supply systems and industry. To address these problems, CCWD operates to a delivered water quality goal with a much lower salinity and has invested well over 1 billion dollars in building Los Vaqueros Reservoir and other associated infrastructure and treatment facilities. Any increase in salinity at CCWD's Old River or Victoria Canal intakes has the potential to significantly impact CCWD's ability to meet its drinking water quality goals, and impacts the reliability of its investments. Increased concentrations of San Joaquin River contaminants also have the potential to adversely impact the health and safety of the residents of the 23 million other people that rely on the Delta as their source for drinking water.

High selenium loads into the San Joaquin River and Delta will impact key fish species and can contribute to deformities, mortality and reduced abundance of these threatened and endangered species. More stringent biological opinions and Delta operations criteria resulting from these fish impacts, can lead to further restrictions on the ability of CCWD to divert water from the Delta for use in Contra Costa County.

As the Regional Board moves towards permitting the WDR for stormwater, the County will continue to participate in the process to ensure any new WDR (or Use Agreement) preserve the downward trend of selenium and salt loading into the San Joaquin River and the Delta, ultimately achieving a zero discharge for stormwater.

The County has the following comments on the Tentative Grassland Bypass Project WDR.

1. A new Use Agreement for Proposed Stormwater Operations has not been completed

The GBP was first negotiated in 1995 between Reclamation, environmental organizations, Contra Costa Water District, Contra Costa County and federal and state regulatory agencies. A key component coming out of those negotiations was the November 1995 federal Use Agreement for use of a 28-mile completed section of the San Luis Drain. The Use Agreement clearly specified the conditions under which the GBP would be operated, monitoring requirements and the consequences if those requirements were not met. This Use Agreement provided the necessary assurances that the Bypass would be operated to reduce contaminant discharges and protect the environment to the greatest extent possible.

The September 2001 and December 2009 Use Agreements continued to ensure selenium and salt loads were reduced each year and would eventually go to zero by December 31, 2019. It is our understanding that the San Luis Delta Mendota Water Authority (SLDMWA) and Reclamation are developing a new Use Agreement. A draft version was provided to the County in March 2019. However, from our discussions with Reclamation, they do not expect to finalize a new Use Agreement until early in 2020.

The Regional Board's Basin Plans and waste discharge requirements, in and of themselves, appear to be insufficient to regulate how the drainage system and Bypass are operated, and to ensure that the Bypass will only be used to discharge stormwater, and as infrequently as possible.

The Regional Board should consider whether a new WDR for the Grassland Bypass Project could wait until a new Use Agreement is executed between Reclamation and SLDMWA.

2. The Duration of Proposed WDR needs to be limited to 5 years

The tentative WDR on page 16, term 7, states:

- 7. This Order does not authorize discharges to the San Luis Drain beyond 2045. Discharges to the San Luis Drain beyond 31 December 2045 shall only be authorized upon a showing that any significant environmental impacts associated with the continued operation of the GBP have been analyzed pursuant to any applicable provisions of CEQA and only after the Dischargers demonstrate to the satisfaction of the Board that the continued operation of the GBP is in compliance with the Endangered Species Act.*

The impacts of the proposed operations of the Grassland Bypass after December 31, 2019 for stormwater management have not been properly modeled (Attachment 1, page 4, CCC Letter dated September 13, 2019) and the full effect of these high rainfall-runoff events and subsequent discharge through the Bypass on water quality and fish and wildlife in Mud Slough and downstream are not yet known.

The Initial Study for the CEQA review of the GBP Long-Term Stormwater Management Plan (LTSWMP) appears to rely on an analysis in Section 2.10 (Hydrology and Water Quality) to determine that the proposed project will have a less-than-significant impact to Mud Slough, and,

therefore, states that no new mitigation measures are required. However, the Initial Study relies on historical data with no computer simulations, and assumed future impacts will be less than historical. A detailed simulation of the amount of excess storm water remaining after filling the existing and new storage basins and releasing stormwater to the San Joaquin River Water Quality Improvement Project (SJRIP) when soils are not completely saturated needs to be carried out.

Similarly, the discharge of excess storm water from the Grassland area through the Bypass should also be modeled over a range of historical rainfall events. Until, these analyses are completed the Regional Board will not have sufficient information to determine if the proposed project will cause adverse environmental effects on Mud Slough, the San Joaquin River and the Delta.

A draft of the proposed Use Agreement for the Drain, provided to Contra Costa County by Joe McGahan, by email, on March 31, 2019, states (on page 13):

A. Term. This Agreement shall become effective on January 1, 2020. It shall continue for a period of 5 years. Ten year extensions will be granted unless other actions are taken that affect the term.

The new WDR should also be limited to a period of 5 years. However, because the first few years of operation after December 31, 2019, may not include any stormwater events, the duration of the new WDR could instead be limited to 5 years after the first stormwater discharges through the Bypass begin. That will allow sufficient data to be collected to allow a fuller disclosure of the water quality and environmental impacts of the proposed operations.

3. The WDR must specifically prohibit all discharges of tailwater and agricultural drainage to Mud Slough and Salt Slough

The tentative WDR fails to specifically prohibit the discharge of agricultural subsurface drainage to the Bypass after December 31, 2019. This was a key condition of the 2009 Use Agreement and the current WDR. There should be no exception based on whether the 2 ppb and 5 ppb selenium limits (for Salt Slough and Mud Slough, respectively) are being met. The proposed future operation of the Bypass must only be for stormwater discharges.

The language on page 13 of the WDR under Prohibitions, terms 2 and 3, should be edited to read:

2. The discharge of agricultural subsurface drainage water to Salt Slough and the wetland water supply channels identified in Appendix 40 of the Basin Plan is prohibited unless the provisions of the Storm Event Plan are being implemented. ~~or the water quality objectives for selenium are being met~~
3. The discharge of agricultural subsurface drainage water to Mud Slough (north) is prohibited after 31 December 2019 unless the provisions of the Storm Event Plan are being implemented. ~~unless water quality objectives for selenium are being met.~~

There are at least three references in the tentative WDR to the discharge of tailwater being prohibited from the Grassland Drainage Area to the Grassland Bypass Channel (page 2, page 21 and Attachment A, page 43), but this is not included under the WDR prohibitions. A new specific prohibition, see below, should be included in the WDR (currently on page 13):

- The discharge of tailwater is prohibited from the Grassland Drainage Area to the Grassland Bypass Channel and thence to Mud Slough

4. The WDR should set a specific salinity objective for Mud Slough downstream of terminus of the Bypass, not just selenium

The Basin Plan and tentative WDR call for the dischargers to meet a selenium concentration of 5 µg/L (ppb), as a 4-day average, in Mud Slough (station D) after December 31, 2019. The WDR should also set a corresponding specific salinity objective, expressed as specific conductance (EC) in µS/cm, as, say, a 14-day average.

The current 2010-2019 Use Agreement includes salinity load targets. These were intended to avoid a situation where actions taken by the drainers successfully removed selenium from the agricultural drainage but were less successful in removing salinity. Without salt load limits, selenium goals could be met but still result in an increase in salinity concentrations and loads in the Bypass.

Figure 1 in Attachment 2 to this letter shows that the historical salt loads from the Grassland Bypass Project, measured at Station B at the terminus of the Bypass, decreased until about 2013. After that, the monthly salt loads again increased. This is a cause for concern to Contra Costa County and CCWD and is the nexus to require a specific salinity objective if discharges of stormwater are allowed to continue. This objective should be addressed through a new Use Agreement and WDR. This would require either a limit on salt loads discharged from the Bypass or a limit on EC, and if the limit is exceeded, it may trigger revisions to the WDR.

In June 2017, the Central Valley RWQCB adopted Resolution R5-2017-0062 amending the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins to add salinity water quality objectives in the San Joaquin River between the mouth of the Merced River (Crows Landing, station N) and the Airport Way Bridge near Vernalis. However, the intent of the existing 2010-2019 Use Agreement was to reduce and eventually eliminate the contribution of the Grassland area discharges to salinity in the San Joaquin River and Delta. Any "*assimilative capacity*" available under the RWQCB's WDR should not be used as an opportunity to now increase salinity discharges from the Grassland drainage area.

At the very least, EC limits should be set for discharges from the Bypass that are equivalent to the proposed selenium concentration objective of 5 µS/cm so that the discharge of salinity is also limited.

The Central Valley RWQCB recently adopted Salt and Nitrate amendments to the Basin Plan that allow upstream San Joaquin River salinity discharges at concentrations that are higher

(1,600 and 2,200 $\mu\text{S}/\text{cm}$) than the State Water Resources Control Board's (SWRCB) south Delta agricultural water quality standards (1,000 $\mu\text{S}/\text{cm}$ and formerly 700 $\mu\text{S}/\text{cm}$ for April-August) and the recommended Secondary Maximum Contaminant Level (SMCL) for the protection of a municipal beneficial use of 900 $\mu\text{S}/\text{cm}$ (as an annual average).

On December 12, 2018, the SWRCB adopted Resolution No. 2018-0059 and relaxed the Water Rights Decision 1641 south Delta agriculture standard for April-August from 700 $\mu\text{S}/\text{cm}$ to 1,000 $\mu\text{S}/\text{cm}$. This degradation of water quality in the south Delta was in direct conflict with the state Antidegradation Policy (SWRCB Resolution No. 68-16) and the federal Antidegradation Policy (40 C.F.R. § 131.12), as well as California Water Code §85020(e) which states that:

The policy of the State of California is to achieve the following objectives that the Legislature declares are inherent in the coequal goals for management of the Delta: ... (e) Improve water quality to protect human health and the environment consistent with achieving water quality objectives in the Delta.

Figure 2 in Attachment 2 to this letter shows the salinity monitoring data (expressed as specific conductance, EC) from the terminus of the Grassland Bypass (station B) and downstream of the Bypass in Mud Slough (station D), as 14-day averages. During periods when there is no flow into the Bypass, evaporation causes the EC values to increase dramatically (station B). The corresponding flows at stations B and D are shown in Figure 3. Salinity concentrations downstream of the Bypass in Mud Slough are generally lower than in the Bypass.

Also shown in Figure 2 (Attachment 2) are potential EC objectives of 3,000 and 1,600 $\mu\text{S}/\text{cm}$. The latter objective is consistent with the Regional Board's recent amendment to Basin Plan as part of the Salt and Nitrate Program. More recently (since April 2018), salinity concentrations (plotted as 14-day averaged EC) at stations B and D have remained at about 3,000 $\mu\text{S}/\text{cm}$, or lower.

The County requests that the GBP WDR include a salinity limit in Mud Slough downstream of the terminus of the Bypass (station D). This could initially be, say, 3,000 $\mu\text{S}/\text{cm}$, as a 14-day average, but gradually reduce to 1,600 $\mu\text{S}/\text{cm}$ after 5 years. This would require coordination with other agencies that contribute to flows and salinity in Mud Slough, such as the Grassland Water District. However, Figure 2 suggests that a 14-day EC limit of 3,000 $\mu\text{S}/\text{cm}$ is achievable at station D. Putting a limit on EC in the Bypass (station B) is not practical because of the effects of evaporation when the Bypass is not used for long periods. A limit on EC at station D will provide a necessary incentive to avoid salinity build up in soils and the reuse area prior to storms.

5. WDR must require detailed (daily) monitoring and reporting of flow, selenium and salinity prior to, during and after stormwater events

The tentative WDR in Attachment B, Table 1 (page 2) lists the monitoring requirements for the GBP WDR. Flows and selenium concentration are required daily. However, salinity (EC) monitoring is only required weekly.

Contra Costa County requests that immediately prior (at least two days) to initiating discharge of stormwater from the Bypass, as well as during and for five days after the discharge has ended, monitoring of salinity (EC) also be measured daily.

Contra Costa County also requests that annual reports be required for monitoring data that also report weekly measurements of flow, selenium and salinity (EC) at the following additional stations:

- Mud Slough upstream of the terminus of the Grassland Bypass (Station C)
- Salt Slough (Station F)

As discussed on WDR Attachment A, page 27, Station C was eliminated as a monitoring site. *"Station C is located in Mud Slough before the San Luis Drain outfall and no subsurface drainage is discharged to the site unless a major storm event occurs. In that case, monitoring is initiated at stations J, K2, L2 and M2 where subsurface drainage enters the wetland supply channels."*

Because this GBP proposed project is focused on "major storm events," Station C should be reinstated for periods just prior to a storm event, during stormwater discharges and for a period of 5 days thereafter. During a storm event, additional flow could also end up discharging into Salt Slough. Monitoring is needed to check whether this does occur.

If these stations are being monitored under a different program, it will be sufficient to collect those data and report them in the GBP annual reports. Currently, relevant data are collected and reported by the U.S. Geological Survey, and other data are reported on both CDEC and CEDEN and are not easy for the stakeholders to access. The annual monitoring reports should collect all relevant data for this region so the data can be readily available in one place for decision makers like the RWQCB and stakeholders in one place.

6. Need specific trigger for storm events

Appendix F (High Rainfall Exemption) of the January 2010 - December 2019 Agreement for Continued Use of the San Luis Drain (Agreement No. 10-WC-20-3975), on page 36, specifies the high rainfall conditions under which the Grassland area drainers would be given an exemption for their selenium discharges.

The high rainfall exemption applied if, during a running 90-day period, cumulative rainfall, measured at the Panoche Water District gauge, equals or exceeds 6 inches in either the current month, or in any of the previous three months; and, if the actual "4-day monthly equivalent low flow at Crow's Landing" during the current month is equal to or exceeds 300% of the "4-day monthly equivalent low flow at Crow's Landing" (i.e., design flow) used to calculate the TMML for that month.

A similar definition of a storm event and trigger to allow stormwater discharges needs to be included in both the new Use Agreement and the GBP WDR to ensure that selenium-laden, high

salinity, water is only discharged into Mud Slough and the San Joaquin River when there is a high rainfall event and there is more runoff than can be handled by short-term storage basins and the enlarged reuse area. The Bypass must no longer be used to discharge agricultural drainage if there has been little or no precipitation.

7. Need to include monitoring for selenium in biota in the south and central Delta

The tentative WDR requires monitoring for selenium concentrations at key surface water locations. However, selenium can also bio-accumulate in fish and other species.

A recent study by National Marine Fisheries Service¹ observed deformed fish in the Delta in 2011 (a wet year), with data suggesting the elevated selenium in San Joaquin River during storm events as a potential cause for the fish deformities. As the GBP has been a major source of selenium to the San Joaquin River and future discharges are being proposed during storm events, the WDR should also a requirement to participate in monitoring of fish tissue in the south and central Delta.

Based on the results of this fish tissue monitoring, additional selenium management actions may be needed to address the bioaccumulation of selenium in the downstream ecosystem.

8. The WDR should require that a Surface Water Quality Management Plan (SWQMP) be prepared within the first six months of the WDR

It is highly likely, based on historical GBP monitoring in Mud Slough and at Crows Landing, that the objectives at these locations (stations D and N) will continue to be exceeded from time to time. The WDR should require that preparation of selenium and salinity management plans begin straightaway, so that the effects of these additional management practices could be put into practice as soon as possible.

Finally, the tentative WDR on page 8 (32a) states that the “proposed project is limited in duration.” This language may have been carried over from the current WDR, which required cessation of all discharges after December 31, 2019, but appears to be no longer valid.

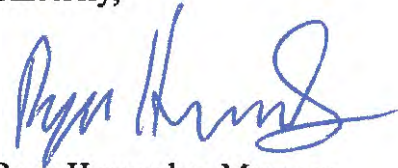
Protecting the progress made by the farmers over the past 25 years should be the baseline of the Grassland WDR. Allowing backsliding in the selenium and salinity loading to the San Joaquin River would be a missed opportunity for the Regional Board.

¹ Rachel Johnson, Standing Too Close to the Elephant: Addressing Scales in Restoration and Fisheries Conservation, presentation at the 14th Biennial State of the San Francisco Estuary Conference

Central Valley Regional Water Quality Control Board
Attention: Sue McConnell
Waste Discharge Requirements for Surface Water Discharges from the Grassland Bypass Project
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Thank you for considering Contra Costa County's comments on the Tentative WDR. County staff and consultants are available to answer any questions you may have and to provide further input on this project. Please contact me at (925) 674-7824.

Sincerely,



Ryan Hernandez, Manager
Contra Costa County Water Agency

cc: John Kopchik, Director Conservation and Development
Maureen Toms, Deputy Director, Conservation
Leah Orloff, Contra Costa Water District
Gary Bobker, The Bay Institute
Rachel Zwillinger, Defenders of Wildlife

Attachments

1. Contra Costa County comments on the Addendum to the Final EIS/EIR for Grassland Bypass Project, dated September 13, 2019
2. Historical salt load and EC data for the GBP

Attachment 2

Historical Salt Load and EC Data for Grassland Bypass Project

The historical salt loads from the Grassland Bypass Project, measured at Station B at the terminus of the Bypass, decreased dramatically until about 2013 when the monthly salt loads again increased (Figure 1). This is a cause for concern to Contra Costa County and CCWD and should be addressed if discharges of stormwater are allowed to continue through a new Use Agreement and WDR.

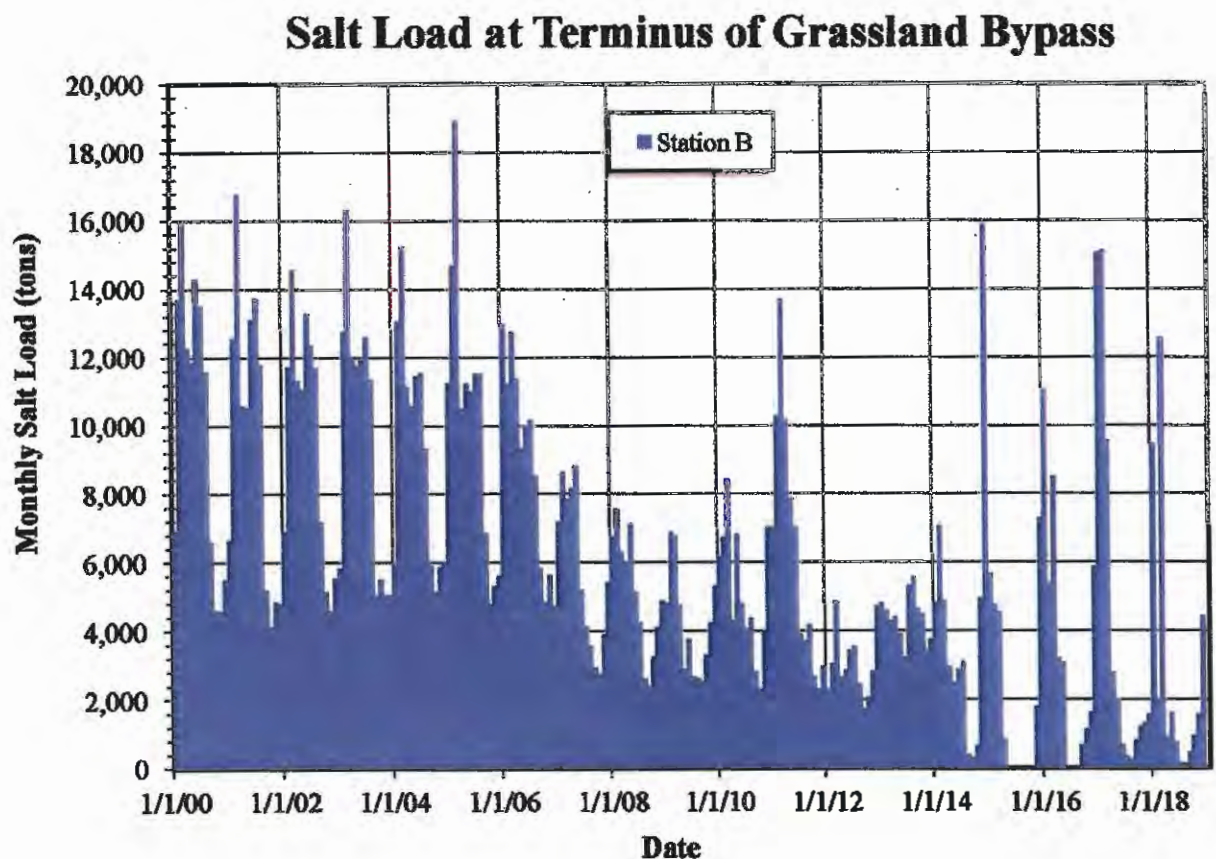


Figure 1: Monthly salt loads from the Grassland Bypass measured at Station B for the period January 2000 through December 2018.

The measurements of salinity (expressed as specific conductance, EC) at the terminus of the Grassland Bypass (station B) and downstream of the Bypass in Mud Slough (station D) are shown in Figure 2, as 14-day averages. During periods when there is no flow into the Bypass, evaporation causes the EC values to increase dramatically (station B). The corresponding flows at stations B and D are shown in Figure 3. Salinity concentrations downstream of the Bypass in Mud Slough are generally lower than in the Bypass.

Also shown in Figure 2 are potential EC objectives of 3,000 and 1,600 $\mu\text{S}/\text{cm}$. The latter objective is consistent with the Regional Board's recent amendment to Basin Plan as part of the Salt and Nitrate Program. More recently (since April 2018), salinity concentrations (plotted as 14-day averaged EC) at stations B and D have remained at about 3,000 $\mu\text{S}/\text{cm}$, or lower.

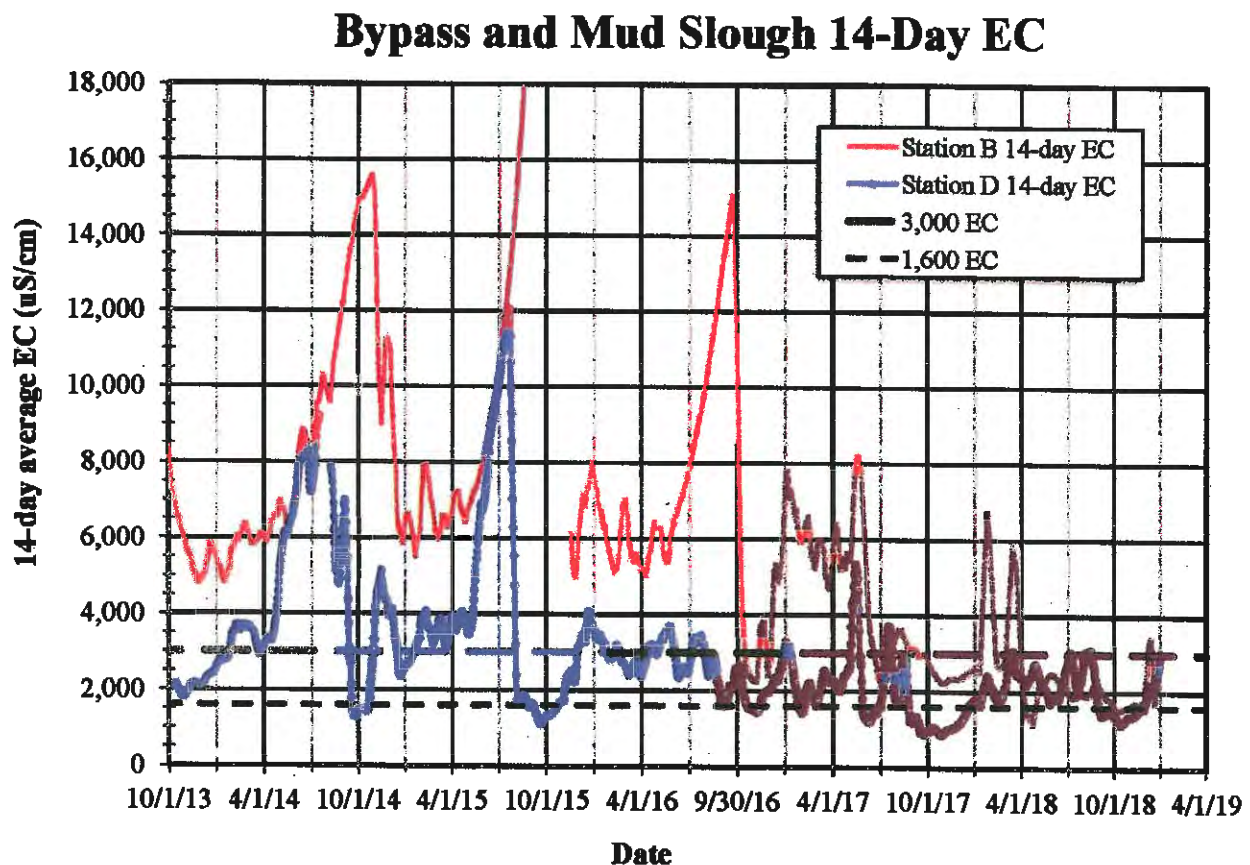


Figure 2: 14-day averaged electrical conductivity (EC) at the terminus of the Bypass (station B) and downstream in Mud Slough (station D) for the period October 2013 through December 2018.

Flowrates in Bypass and Mud Slough

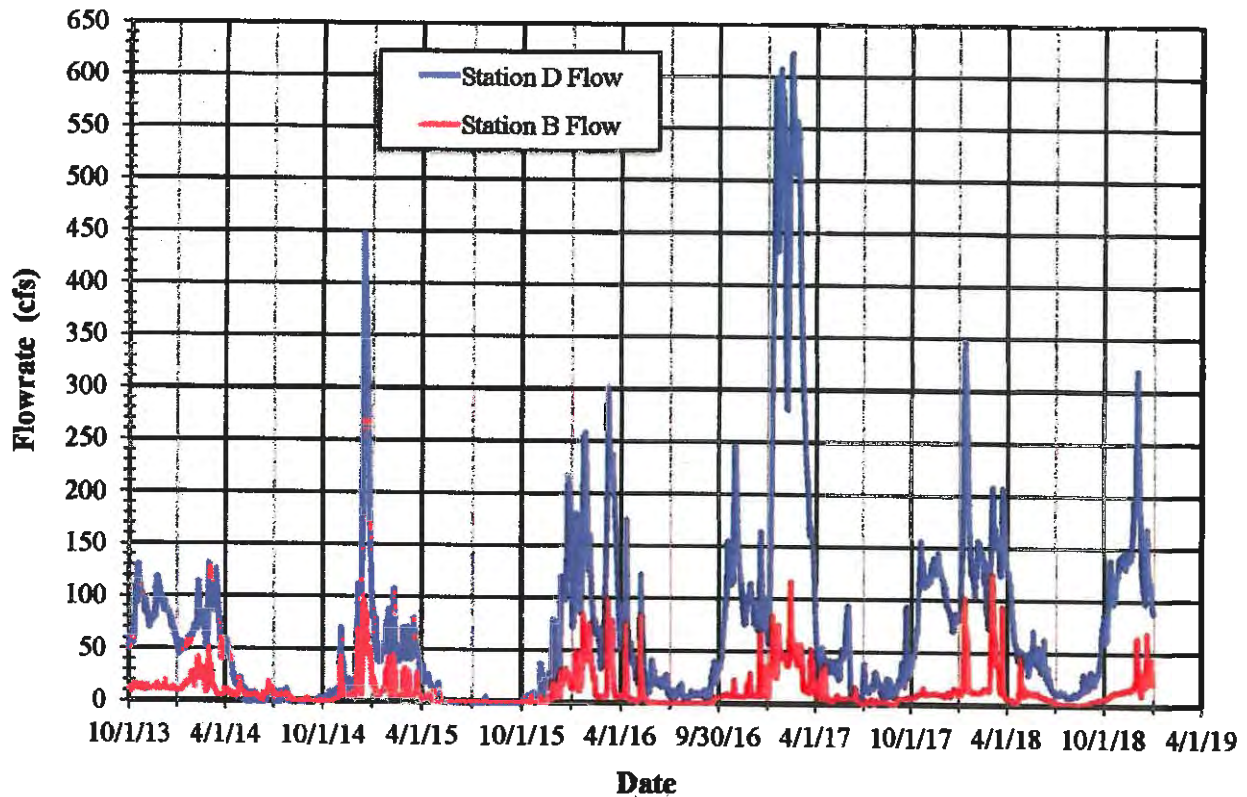


Figure 3: Daily flowrates for the Grassland Bypass measured at station B and in Mud Slough downstream of the Bypass (station D) for the period October 2013 through December 2018.

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Reclamation's website under NEPA documents¹ on December 9, 2019 for a 2-week comment period ending on December 23, 2019. Furthermore, while the title of the DEA mentions a 10-Year Use Agreement, there is no Use Agreement included with the DEA. In addition, there is no draft FONSI provided with the DEA.² Failure to provide these essential documents, combined with a truncated public review period, prevents the public the opportunity to comment and does not comply with the disclosure and transparency required by the National Environmental Policy Act. Several of the undersigned groups, on December 10, 2019, raised these issues and requested a time extension to review such a significant action which will likely impact areas with pollution for decades.³ Reclamation did not respond.

At the heart of the National Environmental Policy Act review is the objective to clearly define the project so as to ensure informed decision making. Reclamation has failed to include essential elements for the project under review and to disclose the impacts of these project elements. Reclamation @ pg 7 claims *"there is no federal nexus for Reclamation outside use of the Drain. Such non-federal actions include the use of existing and new short-term storage basins to reduce storm-induced discharges to Mud Slough (North), enhancements to existing non-federal facilities, installation of new infrastructure such as new pump/conveyance systems and a remote shut-off system for the tile sumps within the GDA, among other features as shown in Figure 4."* And yet these project elements will be enabled by this federal action. There is no Grassland Bypass Project without use of the San Luis Drain. Logistically this federal action is necessary for the project as a whole to go forward. The project cannot proceed without this federal action thus a complete analysis of the impacts from the entire project is required. Furthermore, the claim of no federal nexus is inconsistent with what Reclamation has asserted in filings to the court under penalty of perjury. For example in 2017, Reclamation asserted to the court that the Grassland Bypass Project use of the federal San Luis Drain, the Demonstration Treatment Plant and San Joaquin River Improvement Program (SJRIIP) along with surface impoundments are *"to provide drainage service to the Northerly San Luis Districts."*⁴ Without a full EIS or compliance with the Endangered Species Act or Clean Water Act, the proposed project will add stormwater to the discharges sanctioned under the as yet to be disclosed use

¹ https://www.usbr.gov/mp/nepa/nepa_project_details.php?Project_ID=41544

² Federal law and regulation 'require at least thirty (30) calendar days before making the decision on whether, and if so how, to proceed with a proposed action, the Responsible Official must make the EA and preliminary FONSI available for review and comment to the interested federal agencies, state and local governments, federally-recognized Indian tribes and the affected public. The Responsible Official must respond to any substantive comments received and finalize the EA and FONSI before making a decision on the proposed action. 40 CFR § 6.203 - Public participation.

³ <https://www.restorethedelta.org/wp-content/uploads/Conant-Burman-Ltr-Re-Extension-of-Cmt-Re-SLD-Discharges-Use-Agreement-12-10-19.pdf> PCL et. al. December 20, 2019, to Commissioner Burman and Regional Director Conant: New Information Regarding Deformities in Sacramento Splittail and Drinking Water Quality Raise Significant National Issues for Consideration in the Draft Environmental Assessment for the proposed 10-Year Agreement to Use the San Luis Drain for Discharges to the San Joaquin River and San Francisco-Bay Delta by the San Luis & Delta-Mendota Water Authority--We Seek a Public Hearing, an EIS and Extended Comment Period--2 Weeks Is Insufficient.

⁴ See Dept of Interior Inspector General Report @ <https://www.usbr.gov/mp/docs/northerly-districts-agreement.pdf> pg 7 *"In a 2017 statement to the court, the BOR stated the purpose of the GBP & Demo Plant is, "..... to provide drainage service to the Northerly San Luis Districts... The Demo-Plant's 2012 environmental assessment contained a U.S. Fish and Wildlife Service (FWS) review that expressed several concerns about aspects of the plant, as well as about the San Luis Unit drainage planning documents from 2007 and 2008. Specifically, the FWS believed new information on the performance of the biotreatment system and evaporation ponds, and on mercury in drain water, had become available that should be considered for all future actions."*

agreement contract.⁵ The stated purpose of the Proposed Action is to provide a mechanism to manage storm water flows that cannot be contained within the SJRIP that will by definition include discharging collected polluted sub-surface drain water mixed with stormwater from retention ponds that collect runoff outside of the San Luis Unit service area, along with other mixed drain water and discharge from an expanded SJRIP into the federal San Luis Drain.

Polluted Discharges for 25 Years have been Exempted from Protective Water Quality Standards.

The Grasslands Bypass Project (GBP) began in 1995 as a two-year program, and its Federal Use Agreements for the San Luis Drain have been extended now through Three Use Agreements.⁶ All of these permits and environmental reviews and findings were predicated on zero discharge at the end of each period. First for 5 years, then 10 more and then 10 more. All that time--25 years--the polluted discharge was exempted from meeting protective water quality standards or only required to meet relaxed standards.

Monitoring Has Steadily Been Reduced Without Compliance with Use Agreement Requirements and Too Much Time has Passed Without Adequate Progress.

Furthermore, over that 25 years the project steadily reduced both monitoring of the discharge and compliance with water quality standards. Now the USBR in this DEA and the Grassland Drainers under the GBP Storm Water Plan addressed in a CEQA Addendum⁷ are now proposing a 4th Federal Use Agreement starting in January 2020. Enough is enough. Too much time has already passed without adequate progress on meeting water quality standards. Species are hanging by a thread and migratory bird deformities continue. If the 4th Federal Use Agreement is not approved by December 31, 2019, all discharges (including stormwater) into the San Luis Drain from the GBP are required to cease, and this is what should happen. The cessation of these selenium laden discharges has been promised for the last 25 years and must stop. Further, providing a DEA rather than a full EIR/EIS to accurately inform decision makers does not comply with CEQA and NEPA requirements.

Use of the San Luis Drain to Collect and Discharge Contaminated Stormwater Has Not Been Authorized.

⁵ 3rd Use Agreement pg 7 (K) Agreement No. 10-WC-20-3975 United States Department Of The Interior Bureau Of Reclamation Central Valley Project, California And San Luis & Delta-Mendota Water Authority Agreement For Continued Use Of The San Luis Drain January 1, 2010 Through December 31, 2019.

⁶ 3rd Use Agreement Agreement No. 10-WC-20-3975 United States Department Of The Interior Bureau Of Reclamation Central Valley Project, California And San Luis & Delta-Mendota Water Authority Agreement For Continued Use Of The San Luis Drain January 1, 2010 Through December 31, 2019. 2nd Use Agreement Agreement No. 01-WC-20-2075 United States Department Of The Interior Bureau Of Reclamation Central Valley Project, California And San Luis & Delta-Mendota Water Authority September 2001 to December 21, 2009. The AUTHORITY has entered into Contract No. 8-07-20-X0354 (the "Transfer Agreement"), with RECLAMATION, whereby the AUTHORITY is responsible for, among other things, the operation and maintenance of the San Luis Drain to the extent described in the Transfer Agreement and according to the terms set forth therein;

⁷ Available at these links: http://sldmwa.org/grasslandbypass/NOA_CEQA_GBP%20Addendum%2008-14-19.pdf
<http://sldmwa.org/grasslandbypass/LTSWMP%20Initial%20Study%20080519.pdf>
<http://www.sldmwa.org/grasslandbypass/LTSWMP%20Addendum%20080519.pdf>

The First Use agreement⁸ (1995) for the San Luis Drain authorized use of a 28-mile portion of the Drain by the San Luis Delta Mendota Water Authority (SLDMWA) to carry agricultural drainage water to Mud Slough. There was no stipulation for discharge of stormwater. In fact, in a 1997 report titled, “A Storm Event Plan for Operating the Grassland Bypass Project”⁹ by the Grassland Area Farmers and the SLDMWA, several issues were identified regarding major storm events in the GBP including:

1. *Storm water runoff carries sediment that should not be transported in the Grassland Bypass, or deposited in the San Luis Drain;*
2. *It is not possible during major storm events to separate agricultural drainage water from surface runoff and storm water flows;*
3. *It will not be possible to divert all of the commingled surface runoff, storm water flows, and agricultural drainage water through the Grassland Bypass Channel during major storm events.*
4. *During some storm events, the instantaneous flow rate in Panoche Creek, which carries water from hills adjacent to the agricultural area can exceed 12,000 cubic feet per second, while the average daily flow rate during such events can exceed 2,000 cubic feet per second. These flows can generate more than 40,000 acre-feet of water during a two-week period that includes a storm event.*

Both Congress and the Use Agreements Have Limited Use of the San Luis Drain to Agricultural Drainage--Expanded Use to Include Stormwater is Not A Project Purpose.¹⁰

⁸ See <http://calsport.org/news/wp-content/uploads/GBP-First-Use-Agreement-1995.pdf>

⁹ See pages 2-3: “A Storm Event Plan for Operating the Grassland Bypass Project” by the Grassland Area Farmers and the SLDMWA, 1997.

¹⁰ In 1956, the Bureau of Reclamation delivered to the United States Congress, “A Report on Feasibility of Water Supply Development” for the San Luis Unit (the 1956 Feasibility Report), which recommended constructing a group of water management facilities, called the San Luis Unit, as an addition to the Central Valley Project, in order to bring irrigation waters to an area of approximately 496,000 acres in the San Joaquin Valley. In 1960, Congress passed the San Luis Act, Pub. L. No. 86-488, 74 Stat. 156 (1960). Section 1(a) of the San Luis Act established the obligation of the Secretary of the Interior, prior to construction, to provide drainage and to “construct, operate, and maintain the San Luis unit as an integral part of the Central Valley Project,” for the purpose of furnishing water to approximately 500,000 acres in the San Joaquin Valley See § 1(a). On June 21, 1961, California notified the Secretary of Interior that the State would not provide a master drain. In response, in January 1962, the Secretary of Interior reported to Congress that DOI would construct the San Luis Drain. While the San Luis Drain was still in the planning stages, concerns arose about the potential effect of draining untreated, irrigation waters into the Sacramento-San Joaquin Delta and the San Francisco Bay. Reflecting those concerns, on October 22, 1965, Congress passed Public Law 89-299, 79 Stat. 1096 (1965), which contained an appropriations rider prohibiting selection of a final discharge point for the San Luis Drain until certain conditions were met, including completion of a pollution study and development of a plan to mitigate damage from drainage water on the San Francisco Bay. Those conditions still have not been met. Similar language in the appropriations bill was passed December 2019.

As part of the San Luis Drain system, USBR began constructing the Kesterson Reservoir, which was originally intended to serve as a reservoir that would regulate water flows in the San Luis Drain prior to their discharge into the Sacramento-San Joaquin Delta, but which instead became the temporary terminal disposal site for the San Luis Drain. By 1975, approximately eighty-three miles of the San Luis Drain and the first stage of the Kesterson Reservoir had been completed. At that time, however, the USBR suspended construction of the San Luis Drain, citing public “concerns.”

In addition, the Congressionally authorized, 1978 Task Force Report further indicated that the United States Environmental Protection Agency, which was responsible for issuing permits for discharge of pollutants into

Both the purpose of the project and previous Use Agreements confirm the use only for agricultural drainage. And such use was for a limited amount of time. For example, the Grassland drainers stated explicitly in 1997, "The Grassland Bypass Channel and the San Luis Drain were designed and constructed explicitly for the purpose of conveying agricultural drainage water. Neither facility can accommodate storm water flows nor surface runoff from major storm events."¹¹ The 1995 First Use Agreement stated clearly, "The AUTHORITY has requested that the UNITED STATES permit it to use a portion of the San Luis Drain consisting of approximately 28 miles from the terminus (Kesterson Reservoir) to Milepost 105.72, Check 19 (near Russell Avenue) for the discharge and transportation of a maximum flow of 150 cubic feet per second (cfs) of drainage water to Mud Slough (said portion hereinafter referred to as the Drain)" highlight added.¹² Finally the NEPA documents all stated the purpose of the project was for "a field experiment designed to evaluate approaches to agricultural drainage management. There is no commitment, at this time, to approve long-term use of the Drain."¹³ (highlight added)

These issues associated with permitting continued discharge of pollutants from the federal San Luis Drain are numerous and complex and can only be assessed with a full Environmental Impact Statement (EIS), especially since the 2009 GBP EIR/EIS was predicated upon zero discharge to the San Luis Drain, Mud Slough and the San Joaquin River after December 31, 2019. The current proposed project would expand the project purposes and use to allow storm water and agricultural drain water laced with selenium (and other toxic drainwater constituents such as salt, sulfates, boron, and mercury) be discharged through the federal San Luis Drain to Mud Slough and the San Joaquin River and the Delta Estuary.

We, the signatory organizations on these comments, recommend that the DEA proposing a 10-year extension of the use of the San Luis Drain to discharge stormwater into Mud Slough (North) and the San Joaquin River from Sack Dam to the Merced River be withdrawn. At a minimum a full Environmental Impact Report/Statement (EIR/EIS) must be completed that includes disclosure of the Use Agreement for the San Luis Drain and addresses the full range of interconnected factors related to the GBP, including storm water detention ponds, the SJRP, the lack of viable treatment options, continued discharge of drainage water from areas not included in the GBP, and so on as further described below.

Below, we detail our concerns in several areas and recommend what we believe is the only reliable and cost-effective solution to this evasive contamination problem--order the cessation of this polluted discharge; stop the delivery of water to these contaminated soils; and retire these drainage impaired lands as determined in study after study by the federal government.¹⁴

navigable waters, had not yet established pollution control requirements for the discharge point of the San Luis Drain.

¹¹ Ibid. page 12.

¹² Op. cit. First Use Agreement 1995 pages 1-2.

¹³ USBR,SLDMWA,EPA& USFWS letter to Karl Longly, CVRWQCB 11-3-95 pg 2
<http://calsport.org/news/wpcontent/uploads/USBR-SLDMWA-EPA-USFWS-11-3-95-Ltr-to-CRWQCB.pdf> and Supplemental Environmental Assessment April 1991 and the FONSI dated October 18,1991.

¹⁴ The San Joaquin Valley Drainage Program (SJVDP) A Management Plan for Agricultural Subsurface Drainage and Related Problems on the Westside San Joaquin Valley, also known as the "Rainbow Report" (September 1990); Also see USGS Technical Analysis of In-Valley Drainage Management Strategies for the Western San Joaquin Valley, California Open-File Report 2008-1210 By: Theresa S. Presser and Steven E. Schwarzbach available at: <http://pubs.usgs.gov/of/2008/1210>; Also see USBR Final Environmental Impact Statement in May 2006 and signed

A DEA is Insufficient under NEPA to Address Impacts of 10+ Years of Expanded Use and Additional Discharges from the Federal San Luis Drain.

Under the proposed GBP Stormwater Plan described in the DEA, selenium-contaminated discharges would continue adding stormwater commingled with subsurface agricultural drainage into the San Luis Drain and downstream surface waters for an additional 10 years. This is a substantial change in the definition of the project (from what was included in the 2009 GBP EIS/EIR) and should be analyzed in a full EIR/EIS. Further, there are numerous impacts that are significant and need to be disclosed, including:

- 1) cumulative impacts to downstream beneficial uses
- 2) the failure to meet protective water quality standards
- 3) impacts to endangered and listed species and
- 4) migratory bird impacts.

Individually and together these significant impacts warrant a full EIR/EIS analysis to adequately inform decision makers of the risks posed by continuing these discharges without proper permits and without compliance with the Clean Water Act, including state and federal non-degradation policies, the Migratory Bird Treaty Act and the Endangered Species Act.

The undersigned organizations have a long-standing concern about the GBP because contaminants in agricultural drainage discharges and the added storm water discharges have profound effects to the environment, including effects to downstream waterways, aquatic life, and migratory birds. We include our previous comments on the 2019 Tentative Waste Discharge Requirements for the GBP, the GBP

Stormwater Plan EIR Addendum, the USEPA's proposed water quality criteria for selenium in California, the GBP EIR/EIS and the Basin Plan Amendment by reference.¹⁵

¹⁵ Comments of Pacific Coast Federation of Fishermen's Associations (PCFFA) and the Institute for Fisheries Resources (IFR), and the signatory organizations Re: Comments on Tentative Waste Discharge Requirements (WDRs) for Surface Water Discharges from the Grassland Bypass Project in Merced and Fresno Counties. November 5, 2019.

Coalition comments on Grassland Bypass Project Long-Term Storm Water Management Plan EIR Addendum and Initial Study--A Full EIR-EIS is Required. September 9, 2019.

Coalition comments of environmental, fishing and environmental justice organizations opposed U.S. EPA's proposed federal water quality criteria for selenium applicable to California. March 28, 2019.

<http://calsport.org/news/wp-content/uploads/PCL-et.-al-Cmt-Letter-EPA-Ca-Selenium-Criteria-Doc-No.-EPA-HQOW-2018-00....pdf>

Comments of the Pacific Coast Federation of Fishermen's Associations Requesting Denial of Proposed Waste Discharge Requirements for Surface Water Discharges from the Grassland Bypass Project, Stephan C. Volker, June 22, 2015.

https://www.waterboards.ca.gov/centralvalley/water_issues/grassland_bypass/wdrs_development_archive/2015may/2015_05_gbp_com_pcffa.pdf

Re: Land Retirement Benefits to Grasslands Bypass Project and Draft Waste Discharge Requirements, Coalition Letter to CVRWQCB Follow-up on Grasslands WDR, September 8, 2014.

<http://calsport.org/news/wp-content/uploads/Coalition-response-letter-to-Longley-re-gbp-land-retirement.pdf>

Coalition Comments Re Draft Waste Discharge Requirements for the Grassland Bypass Project, June 30, 2014. <http://calsport.org/news/wp-content/uploads/Final-coalition-comments-on-Draft-GBP-WDR-6.30.14.pdf>

Coalition Comments: Grasslands Bypass Project -- Violations of the Endangered Species Act and Reduced Monitoring Threaten Endangered Species and Public Health, November 27, 2013.

<http://calsport.org/news/wpcontent/uploads/2013/12/Coalition-Letter-on-GBP-ESA-Violations-Monitoring-Reductions-LTR.Corrected-.pdf>

Coalition Comments: Opposition to the Proposal to Curtail Monitoring at the Grassland Bypass Project. August 11, 2011. <http://calsport.org/news/wp-content/uploads/2011/09/Opposition-To-Grassland-Bypass-MonitoringReductions.pdf>

CSPA, CWIN and AquAlliance submit Comments to State Water Board Regarding Grassland Bypass Project and Basin Plan Amendment. September 22, 2010. <http://calsport.org/news/cspa-cwin-and-aqualliance-submit-comments-to-state-water-board-regarding-grassland-bypass-project-and-basin-plan-amendment/>

Sierra Club et. al. Comments: Grassland Bypass Project & San Joaquin River Selenium Basin Plan Amendments September 22, 2010.

https://www.waterboards.ca.gov/water_issues/programs/tmdl/docs/sjr_selenium/comments092210/jim_metropulos.pdf

Comments of California Sportfishing Protection Alliance and California Water Impact Network on the draft environmental impact report for the Irrigated Lands Regulatory Program and related documents. Also attached are several comments prepared by three expert consultants September 27, 2010.

<http://calsport.org/doclibrary/pdfs/207.pdf>

Now, the GBP Drainers propose to continue to use the federally owned San Luis Drain to convey stormwater commingled with contaminated agricultural drainage water to the San Joaquin River via Mud Slough (North). The GBP Stormwater Plan includes a number of management actions and commitments that will not be sufficient to protect downstream beneficial uses. The DEA and drainers' GBP Stormwater Plan effectively sanction continued excessive pollution, especially during stormwater events, of Mud Slough (North), the San Joaquin River, and ultimately the Sacramento-San Joaquin Delta, by failing to enforce science-based protective water quality standards for selenium and allowing the continued contamination of these water bodies. Excess selenium in streams kills or deforms fish and other aquatic life and is a human-health concern to people who fish or hunt in impacted areas.

Under the proposed GBP Stormwater Plan, selenium (and other drain water constituents, such as salt, sulfates, boron, and mercury) will continue to be discharged from the federally owned San Luis Drain directly into the waters of the state and nation. The failure to enforce protective selenium water quality objectives transfers pollution from these Grassland drainers through this federal drain to the waters of the state, harming beneficial uses of these waters by our members and the public, including but not limited to, domestic water supplies, public health, and other public trust values. In addition, impacts of climate change, which were not considered in previous environmental assessments in concert with implementation of the GBP Stormwater Plan, must be disclosed in a full EIR/EIS review. Also the cumulative impacts from sanctioning this selenium discharge across decades without compliance with the Clean Water Act and the continued discharge without adequate permitting and monitoring must be disclosed. Recent testimony before the California Regional Water Quality Control Board, indicates lethal and deforming selenium levels have accumulated in Sacramento splittail fish in the Delta Estuary downstream.¹⁶

State and Federal Permitting Agencies Are Permitting Different Projects with Different Time Frames--NEPA Requires a Stable Project.

We note that the time frame reviewed in DEA considers use of the San Luis Drain for 10 years. Yet the GBP Stormwater Plan EIR Addendum proposed use of the San Luis Drain is for a period of 25 years (2020-2045).¹⁷ Further, in light new evidence of selenium effects to fish in the Delta, and public comments submitted on a tentative Waste Discharge Requirement (WDR) for the GBP Stormwater Plan, the Central Valley Regional Water Quality Control Board approved a WDR for the GBP Stormwater Plan for 25 years with a mandatory 2-year review of the permit (in end of 2021).¹⁸

There was no Use Agreement provided with the DEA, making it impossible to know what the duration of the proposed action is and compromising the public's ability to review and comment on this action. We therefore recommend that the DEA be withdrawn until a full EIS can be completed which includes the new Use Agreement for the San Luis Drain.

Environmental Coalition Comments on Draft Staff Report for Grasslands Bypass Project Basin Plan Selenium Amendments to The Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, April 26, 2010 available at:

https://www.waterboards.ca.gov/centralvalley/water_issues/grassland_bypass/grasslands_bpa_coalition_ltr.pdf

¹⁶ See the Central Valley RWQCB staff testimony before the Central Valley RWQCB, December 5, 2019.

¹⁷ See: <https://ceqanet.opr.ca.gov/Project/2007121110>

¹⁸ https://www.waterboards.ca.gov/centralvalley/water_issues/grassland_bypass/#tentwdrsgbp

A National Pollutant Discharge Elimination System (NPDES) Permit is Required.

On September 6, 2019 the Ninth Circuit Court of Appeals ruled that commingled discharges from the GBP are not exempt from NPDES permitting requirements. *Pac. Coast Fed'n. of Fishermen's Ass'ns v. Glaser*, 937 F.3d 1191, 1199 (9th Cir. 2019). In reaching its decision, the Court issued a landmark ruling under the Clean Water Act's exemption for discharges from irrigated agriculture. First, the Court held that the Defendants had the burden of establishing that their discharges were "composed entirely of return flows from irrigated agriculture." *Id.* at 1197. Second, the Court ruled that only those discharges that are composed entirely of return flows from irrigated agriculture were exempt. *Id.*

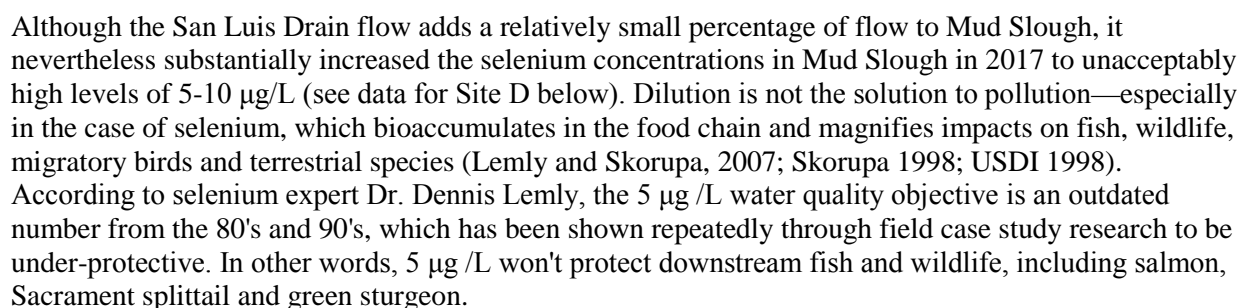
Applying these rulings to the commingled discharges of the GBP, the Court held that all of the Plaintiffs' claims should proceed. *Id.* at 1200. Because those commingled discharges were not composed entirely of return flows from irrigated agriculture, they did not fall within the exemption. In other words, the Court held that the return flow exemption from the Clean Water Act's NPDES permit requirements did not apply based on the fact that non-exempt flows were commingled with discharges from irrigated agriculture. This DEA proposes a Use Agreement that does not conform to federal law and this court ruling.

The US Environmental Protection Agency (USEPA), and by delegation under the Clean Water Act (CWA) and California's Porter-Cologne Water Quality Control Act, the California State and Regional Water Quality Control Boards, have the authority to regulate agricultural drainage under the CWA under comprehensive federal statutory authority for regulating pollutant discharges to the nation's navigable waters. The term "pollutant" under Porter-Cologne includes "agricultural waste discharged into water," and the term "navigable waters" encompasses the San Joaquin River, its principal tributaries, and inflowing ditches and drains.¹⁹ Thus, discharges of agricultural drainage water to the San Joaquin River and its tributaries are subject to regulation under the CWA (Thomas and Leighton-Schwartz, 1990). The GBP Stormwater Plan should be required to obtain a NPDES permit to discharge pollution to navigable waters or to discharge commingled groundwater, surface water and agricultural drainage containing pollutants such as selenium, boron, salt, sulfate and mercury.²⁰

Excessive discharges of selenium-laden drainage and contaminated groundwater still is occurring from the GBP. For example, during the winter/spring of 2017, water quality monitoring data clearly show high selenium concentrations (e.g., 20-40 µg/L) associated with high flow conditions in water entering the San Luis Drain from the GBP. These levels can be lethal to fish and wildlife and accumulate up the food chain, magnifying the impacts to other species. The figure below shows selenium concentrations at Site B2 in the San Luis Drain during 2017.

¹⁹ See, e.g., Karl Phale, *Water Quality Control In California: Citizen Participation In the Administrative Process*, Ecology Law Quarterly 400, 406 (1971), available at: <https://scholarship.law.berkeley.edu/cgi/viewcontent.cgi?article=1011&context=elq> ("Among the items defined as waste prior to the Porter-Cologne Act are agricultural drainage waters containing materials not present prior to use,...and materials used in agricultural operations which are not intentionally applied to waters, such as insecticides, herbicides, and other chemicals.")

²⁰ See, e.g., EPA's NPDES description on its website, available at <https://www.epa.gov/cwa-404/clean-water-act-section-402-national-pollutant-discharge-elimination-system>.



The DEA and drainers GBP Stormwater Plan will allow continued discharges of a blend of stormwater, polluted groundwater and drainage to Mud Slough (North) and the San Joaquin River. This plan should be analyzed in a full EIR/EIS and the cumulative impacts to downstream anadromous fish, wildlife, and terrestrial species should be included in that analysis. Impacts to the Delta Estuary and its species from the proposed action, as well as other actions, are profound. Continued operation of the CVP and SWP is likely to jeopardize the continued existence of endangered species in the Delta, and stormwater runoff and subsurface agricultural drainage from GBP and nearby CVP-irrigated lands contaminates the San Joaquin River and hence the Delta with selenium and other toxic constituents. See testimony from Restore the Delta on Salinity and Selenium Science and Modeling for the Bay/Delta Estuary.²¹

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Further, in a letter from National Marine Fisheries Service (NMFS) to the SWRCB on the San Joaquin River Selenium Control Plan Basin Plan Amendment (dated September 22, 2010), NMFS stated selenium contamination in the San Joaquin River is problematic in restoring spring and fall-run Chinook salmon to the upper reach of the San Joaquin River. The NMFS letter also noted that selenium in the San Joaquin River could negatively affect Central Valley steelhead and the Southern distinct population segment of the North American green sturgeon.²²

Studies by the US Geological Survey have documented elevated levels of selenium in the benthic clam food chain used by the Sacramento splittail and the federally listed green sturgeon.²³ Worthy of note is a photo from Dr. Rachel Johnson, provided to the Central Valley Regional Water Board and presented at the State of the Estuary Conference in 2019²⁴ depicting high numbers of Sacramento splittail (photographed in the Delta with an underwater camera in 2011) with spinal deformities (marked by red dots) typical of selenium contamination. As described in Stewart et al (2019), *“In the spring of 2011, young-of-year Splittail displaying a high incidence (>40%) of spinal deformities characteristic of Se toxicity were discovered at the site of a water diversion station in the San Joaquin Valley of the Delta (U.S. Department of the Interior, Bureau of Reclamation Tracy Fish Collection Facility).”* Dr. Johnson noted at the State of the Estuary conference that, *“It’s actually rare to actually see deformed animals in nature because usually something eats them, and so we wanted to take this opportunity to try and diagnose why it is that we had so many of these fish that had these deformities.”* Although the Sacramento splittail is not currently listed as threatened or endangered by the Federal or State government, they serve as an indicator species for species such as federally listed as threatened Green sturgeon²⁵ which feed on the same species of clam (Asian clam) as splittail.

²² https://www.waterboards.ca.gov/water_issues/programs/tmdl/docs/sjr_selenium/comments092210/howard_brown.pdf

²³ See Stewart et al, Dec 7, 2019, *Resolving selenium exposure risk: Spatial, temporal, and tissue-specific variability of an endemic fish in a large, dynamic estuary* in Science of the Total Environment, available at: <https://www.sciencedirect.com/science/article/pii/S0048969719359145>

²⁴ See Mavens Notebook summary of Dr. Johnson’s presentation at the 2019 State of the Estuary Conference: <https://mavensnotebook.com/2019/12/05/state-of-estuary-standing-too-close-to-the-elephant-addressing-scales-in-restoration-and-fisheries-conservation/>

²⁵ <https://www.fisheries.noaa.gov/species/green-sturgeon>



R. Johnson, 22 Oct 2019 State of the Estuary Conference

Greater outflow of the San Joaquin River associated with CVP and SWP operations in the Delta could result in even further transport of selenium and sulfate from agricultural drainage discharges in the San Joaquin River and into the Delta (Lucas and Stewart 2007). Also, note the Lucas and Stewart (2007) discussion on seasonal trends of bivalve selenium concentrations in the North Delta and its relationship to the San Joaquin River, “*Several explanations for the temporal trends in bivalve Se concentrations (which did not exist in the 1980’s) are possible. One possibility is that refinery inputs of selenium have been replaced by San Joaquin River inputs. Models indicate that if SJR inflows to the Bay increase, as they may have in recent years with barrier management, particulate Se concentrations in the Bay could double, even with no increase in irrigation drainage inputs to the SJR. The fall increase in Se in C. amurensis also occurs during the time period when the ratio of SJR/Sac River inflow is highest. Further changes in water management could exacerbate these trends...*”.

Stormwater runoff from GBP and its upstream watershed can also contain elevated concentrations of mercury. Results from the CalFed Mercury study found elevated levels of mercury in fish from the lower San Joaquin River and Mud Slough (Davis et al. 2000; Slotton et al. 2000). A significant finding of the CalFed Mercury Study in the San Joaquin Basin was that Mud Slough contributes about 50% of the methylated mercury at Vernalis (legal boundary of the Delta), but only 10% of the water volume during the non-irrigation season (September to March) (Stephenson et. al., 2005).

Sulfate loading in the San Joaquin River from the GBP discharges in concert with Delta operations could result in downstream environmental impacts that should be considered in a full EIR/EIS. Sulfate reducing bacteria are the primary agents responsible for the methylation of mercury in aquatic ecosystems. Wood et al. (2006) found that sulfate concentrations are about seven times higher in the San Joaquin River than in the Sacramento River, and that addition of sulfate is predicted to stimulate methylmercury production when it is limiting. Two factors influencing sulfate concentrations in the Bay-Delta are the electrical conductivity (EC) and the ratio of San Joaquin River to Sacramento River water.

Since these impacts are potentially significant, an EIS must be prepared²⁶ along with a complete CEQA analysis to accurately inform decision-makers before allowing these pollutants to be spread downstream.

²⁶ See 40 C.F.R. § 1508.27(b)(9).

The 5 ppb Se water quality performance goal in Mud Slough and San Joaquin River upstream of Merced is not protective of downstream beneficial uses and public trust resources.

The 5 µg/L selenium water quality objective in the Basin Plan for Mud Slough (North) and the San Joaquin River from Sack Dam to Vernalis and referenced in the DEA and in Table 5.2 of Attachment A in the Tentative WDRs for the GBP Stormwater Plan is not protective of downstream beneficial uses including fish and wildlife resources that use those surface waterways. The USEPA in the 1990's had proposed a 5 µg/L selenium water quality objective for California in the California Toxics Rule (CTR). Pursuant to the Endangered Species Act (ESA), and prior to the USEPA promulgating water quality objectives (including selenium) for the CTR, the USEPA was required to consult with the US Fish and Wildlife Service and the National Marine Fisheries Service (collectively, "Services") and obtain the Services' concurrence that none of the proposed criteria would jeopardize any ESA-listed species. Upon that review, the Services found that the 5 µg/L chronic criterion for selenium proposed by USEPA in the CTR would likely jeopardize 15 ESA-listed species (Emphasis added). To avoid a final "Jeopardy Opinion" from the Services, and the associated legal ramifications, the USEPA agreed to reevaluate their CWA criteria guidance for selenium by 2002 (FWS and NMFS 2000).²⁷

To comply with the Service's 2000 Biological Opinion on the CTR, the USEPA in November 2018 proposed new water quality objectives for California (lentic and lotic water, and fish tissue) that would be protective of listed species: Federal Selenium Criteria for Aquatic Life and Aquatic Dependent Wildlife Applicable to California Docket RIN, 2040-AF79 EPA-HQ-OW-2018-0056 FRL-9989-46-OW. The USEPA's proposed rule did not include waters within known selenium-contaminated geographical areas, including tributary flows into the San Francisco Bay Delta system such as, the San Joaquin River from Sack Dam to Vernalis, Mud Slough, Salt Slough, along with the water supply channels in the Grassland watershed, and the Grasslands Ecological Area in Fresno and Merced Counties. Instead, the USEPA proposed rule defers to existing State established water quality objectives for Mud Slough (North) and the San Joaquin River upstream of the Merced River of 5 µg/L 4-day average (as defined in the Regional Board's June 2010 Basin Plan Amendment to address Selenium Control in the San Joaquin River Basin²⁸).

From page 30 of Attachment A for the Tentative WDRs:

Table 5.2: Selenium Numerical Objectives

4-day Average	Maximum	Location
5 µg/L	20 µg/L	Mud Slough (north) and the San Joaquin River from the Mud Slough confluence to the Merced River
5 µg/L	12 µg/L	San Joaquin River, mouth of the Merced River to Vernalis

The selenium objectives for Mud Slough and the San Joaquin River are not based on the current science of selenium toxicology and are not protective of beneficial uses. Both the Canadian government and the

²⁷ Final Biological Opinion on the effects of the U.S. Environmental Protection Agency's "Final Rule for the Promulgation of Water Quality Standards: Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California (March 24,2000), available at <https://www.regulations.gov/contentStreamer?documentId=EPA-HQ-OW-2018-0056-0144&contentType=pdf>

²⁸ https://www.waterboards.ca.gov/centralvalley/water_issues/grassland_bypass/sac_sj_basins_salinity_staffrpt.pdf

USEPA have established water quality criteria to protect aquatic life that are substantially lower than the 5 µg/L Basin Plan selenium objectives for Mud Slough and the San Joaquin River. Even the new EPA criteria are unlikely to be adequately protective. A recent Canadian study²⁹ concluded “that fish exposed to aqueous selenite concentrations at levels similar to the current CCME [Canadian Council of Ministers of the Environment] water quality guideline for the protection of aquatic life (1 µg /L) can exceed tissue guidelines for the protection of fish populations established by the USEPA and that there is potential for adverse effects particularly in developing embryos.” The authors also state: “*In Canada, Se bioaccumulation exceeding the toxicity threshold for fish tissues set by the USEPA and the BC MoE (there are currently no federal tissue-based guidelines in Canada) have been documented recently in areas downstream of coal, uranium, and metal mining operations, even in cases where aqueous selenium concentrations have not exceeded the current CCME guideline of 1 µg g/L (Muscatello et al. 2008; Kuchapski and Rasmussen 2015; Ponton and Hare 2015).*” In addition, USGS and USEPA recently reported on fish sampling downstream of Libby Dam in Montana, USA, where every sample of Mountain Whitefish ovaries had selenium concentrations were well in excess of EPA's new (2016) ovary tissue criterion, even though all water samples (along 100+ river miles of sampling) were at < 1.2 ppb selenium. Also, it was confirmed that the chemical form of selenium in that stretch is predominantly selenate, the same speciation of selenium present in the San Joaquin River watershed.

To comply with the Service's 2000 Biological Opinion on the CTR, the USEPA in July 2016 proposed selenium water quality criteria that would be protective of federally-listed species in the San Francisco Bay Delta (Establishment of Revised Numeric Criteria for Selenium for the San Francisco Bay and Delta, State of California, Docket RIN 2040–AF61, EPA–HQ–OW–2015–0392; FRL–9946–01–OW). Supporting documentation for this USEPA Docket for Selenium in California includes 2 reports by USFWS: *Species at Risk from Selenium Exposure in California Inland Surface Waters, Enclosed Bays and Estuaries, for a list of species considered most at risk for selenium exposure in CA*³⁰ and *Species at Risk from Selenium Exposure in the San Francisco Estuary*³¹. The species identified at most risk for selenium exposure in the San Joaquin Valley and San Francisco Estuary were denoted as:

- Mammals: Buena Vista Lake Ornate Shrew;
- Birds: Bald Eagle, California Black Rail, California Clapper Rail, California Least Tern, Greater Scaup, Lesser Scaup, White-winged Scoter, Surf Scoter, Black Scoter;
- Reptiles: Giant Garter Snake;
- Fish: Chinook Salmon, Steelhead, Green Sturgeon, White Sturgeon, Delta Smelt, and Sacramento Splittail.

²⁹ <https://www.ncbi.nlm.nih.gov/pubmed/31145497> *Distribution of Experimentally Added Selenium in a Boreal Lake Ecosystem* *Environ Toxicol Chem.* 2019 Sep;38(9):1954-1966. doi: 10.1002/etc.4508. Epub 2019 Jul 26. Pg 1955 and USGS and USEPA reported on fish sampling downstream of Libby Dam in Montana, USA, where every sample of Mountain Whitefish ovaries had Se concentrations well in excess of EPA's new (2016) ovary tissue criterion even though all water samples (along 100+ river miles of sampling) were at < 1.2 ppb Se. Also, it was confirmed that the chemical form of selenium in that stretch is predominantly selenate, the same speciation as in the San Joaquin River watershed.

See: <https://www.epa.gov/newsreleases/epa-and-partners-release-data-and-findings-kootenai-riversampling-effort>

See: <https://www.sciencebase.gov/catalog/item/5d3b6ef1e4b01d82ce8d7aef>

³⁰ <https://www.regulations.gov/contentStreamer?documentId=EPA-HQ-OW-2018-0056-0144&contentType=pdf>

³¹ <https://www.regulations.gov/contentStreamer?documentId=EPA-HQ-OW-2018-0056-0265&contentType=pdf>

The proposed GBP Stormwater Plan and DEA is seeking to comply with the selenium water quality objectives specified in the 2010 Basin Plan Amendment (5 µg/L, 4-day average), but the proposal is lax, allowing for high spikes of selenium contaminants that will bio-accumulate throughout the ecosystem. The Stormwater plan includes mitigation measures that establish a Mud Slough (North) water quality “goal” of 3 µg/L Se, 4-day average. For every 3 months that the drainers meet this 3 µg/L performance goal, one exceedance of 5 µg/L 4-day average is allowed. These goals and objectives would likely result in harm to aquatic fish and wildlife as denoted in the Service’s 2000 Biological Opinion on the CTR. We recommend that State and Federal Fish and Wildlife agencies be consulted on the effects of implementation of the GBP Stormwater Plan and relaxed standards that are not protective of migratory birds and endangered anadromous fish populations and that these consultations be included in a full EIS.

Short term spikes of selenium in a waterway can have longer lasting effects in an ecosystem. Beckon (2016) noted that when a bioaccumulative substance such as selenium is introduced into or removed from the environment, the processes by which it is assimilated into upper trophic levels of the ecosystem may be complex and prolonged. These processes include several levels of trophic transfer, each entailing the time required to consume food, assimilate the substance of interest, and the time span during which the organism continues to survive before being eaten by a member of the next higher trophic level. Beckon noted that for some species of piscivorous fish the lag time for selenium exposure to bioaccumulate in the upper trophic level of fish is over one year from the initial exposure. Thus, short-term exceedances of the 5 µg/L selenium objective can continue to have deleterious effects to the upper trophic level species several months to over a year after the event.

Our organizations have submitted several comment letters on protective selenium objectives in California.³² In March 2019, PCFFA and others provided comments to the USEPA on their proposed selenium criteria for California.³³ We recommended that a chronic, legally binding selenium objective of no greater than 2 µg/L (4-day average) be included in the GBP Stormwater Plan for receiving waters of stormwater/drainage discharges. That comports with the recommendations of several experts that the criterion should be 2 µg/L or less (DuBowoy 1989; Lemly and Skorupa 2007; Peterson and Nebeker 1992; Swift 2002). Exceeding the water criterion should trigger additional biological monitoring to determine if the tissue criteria for selenium proposed by USEPA has also been exceeded. Allowing higher contaminant levels would require reinitiation of consultation under the State and Federal Endangered Species Acts.

Environmental Assessment of the Use Permit & Continued Pollution Discharges Must Consider Effects GBP Discharges on Compliance with USEPAs Proposed Selenium Criteria for The Bay-Delta Estuary.

On July 15, 2016, the USEPA proposed selenium water quality criteria applicable to the San Francisco Bay and Delta to ensure that the criteria are set at levels that protect aquatic life and aquatic-dependent wildlife, including federally listed threatened and endangered species. Establishment of Revised Numeric

³² See <http://calsport.org/news/wp-content/uploads/EPA-Selenium-Cmt-LTR-Re-Docket-No.-EPA-HQ-OW-20040019.pdf> and <http://calsport.org/news/wp-content/uploads/Technical-Review-2004-EPAs-Draft-Tissue-BasedSelenium-Criterion.pdf>

³³ Coalition comments of environmental, fishing and environmental justice organizations oppose U.S. EPA's proposed federal water quality criteria for selenium applicable to California. March 28, 2019. <http://calsport.org/news/wp-content/uploads/PCL-et.-al-Cmt-Letter-EPA-Ca-Selenium-Criteria-Doc-No.-EPA-HQOW-2018-00....pdf>

Criteria for Selenium for the San Francisco Bay and Delta, State of California, Docket RIN 2040–AF61, EPA–HQ–OW–2015–0392; FRL–9946–01–OW.³⁴ The USEPA proposed rule established selenium criteria based on fish tissue values, prey (clam) tissue values, and dissolved and particulate water column values. As USEPA noted in their technical support document for the proposed selenium criteria, “Since the most significant exposure pathway of selenium to species of concern in the San Francisco Bay and Delta is through diet, the currently applicable criteria for selenium from the NTR [5 µg/L] no longer adequately protect species in the estuary.”

The San Francisco Bay and Delta ecosystem is at risk due to environmental degradation, including impacts from elevated levels of selenium. Waterways in the North Bay and Delta, including the Carquinez Straits, Suisun Marsh, and Sacramento-San Joaquin Delta, are listed as impaired for selenium on the 303(d) list (being addressed by a USEPA approved TMDL).³⁵ Sources of selenium contamination include agricultural drainage from the Central Valley and effluent discharges from oil refineries (Linares et al 2015; Presser and Luoma 2010). Several endemic species are listed under the ESA as threatened or endangered, including green sturgeon, Chinook salmon, steelhead trout, delta smelt, and the California Ridgway’s rail, as well as many migratory bird species that use the estuary as a wintering ground, including greater and lesser scaup, and white-winged, surf, and black scoters. The USEPA noted on page 46036 of the Federal Register Notice 81(36) that “[t]he analyses to develop the fish tissue and the avian egg tissue benchmarks used in the modeling, and the modeling results used to derive the proposed water column criteria, indicate the health of these species would be negatively impacted from exposure to selenium water column concentrations above 0.2 µg /L, which would be allowed to occur under the existing NTR selenium criterion of 5.0 µg /L. Accordingly, EPA finds that it is necessary to propose revised and more protective criteria for selenium in order to help ensure the continued protection of these vulnerable species and associated designated uses.”

Our organizations submitted comments to USEPA on the proposed selenium water quality and tissue criteria for the Bay Delta supporting more protective water quality criteria and hereby incorporate those comments by reference.³⁶ Reclamation should consider how the selenium discharges allowed in the DEA GBP will affect the Bay-Delta ecosystem and could affect compliance with EPA’s proposed water quality criteria for San Francisco Bay and Delta. The 5.0 µg /L Basin Plan selenium objective for Mud Slough and the San Joaquin River will result in non-compliance with proposed water quality criteria and cause deleterious effects to fish and wildlife in the Bay-Delta.

³⁴ Available at <https://www.federalregister.gov/documents/2016/07/15/2016-16266/water-quality-standards-establishment-of-revised-numeric-criteria-for-selenium-for-the-san-francisco>

³⁵ Available at https://www.waterboards.ca.gov/water_issues/programs/tmdl/2014_16state_ir_reports/category4a_report.shtml

³⁶ Coalition comments of environmental, fishing and environmental justice organizations on EPA’s Water Quality Standards for the Establishment of Revised Numeric Criteria for Selenium for the San Francisco Bay and Delta. October 28, 2016. Available at: <https://www.regulations.gov/document?D=EPA-HQ-OW-2015-0392-0246>

Table 2. Proposed Selenium Water Quality Criteria for the San Francisco Bay and Delta

Media Type	Tissue		Water Column ¹		
			Dissolved		Particulate
Criteria	Fish Whole Body or Muscle	Clam	Chronic	Intermittent Exposure ²	Chronic
Magnitude	8.5 µg/g dw whole body or 11.3 µg/g dw muscle	15 µg/g dw	0.2 µg/L	$WQC_{int} = \frac{0.2 \mu\text{g/L} - C_{bkgrnd}(1 - f_{int})}{f_{int}}$	1 µg/g dw
Duration	Instantaneous measurement	Instantaneous measurement	30 days	Number of days/month with an elevated concentration	30 days
Frequency	Not to be exceeded	Not to be exceeded	Not more than once in three years	Not more than once in three years	Not more than once in three years

¹ Dissolved and particulate water column values are based on total selenium (includes all oxidation states, i.e., selenite, selenate, organic selenium and any other forms) in water.

² Where C_{bkgrnd} is the average background selenium concentration in µg/L, and f_{int} is the fraction of any 30-day period during which elevated selenium concentrations occur, with f_{int} assigned a value ≥ 0.033 (corresponding to one day).

Effects on Drinking Water Supplies in the Delta Need to be Disclosed and Analyzed.

The Contra Costa Water Agency in their oral comments to the Regional Board on the GBP WDR on December 5, 2019 also voiced concerns over increases in salinity from GBP discharges. Contra Costa WA pumps their drinking water from the south Delta and increases in EC(salinity) can have real deleterious effects to their drinking water supply, and these effects should be addressed in a full EIS.

Electrical conductivity (EC) at Station R was as high as 4,000 µs/cm in 2015 and 1,700 µs/cm in 2018, exceeding the 1,600 µs/cm EC objective in Basin Plan.

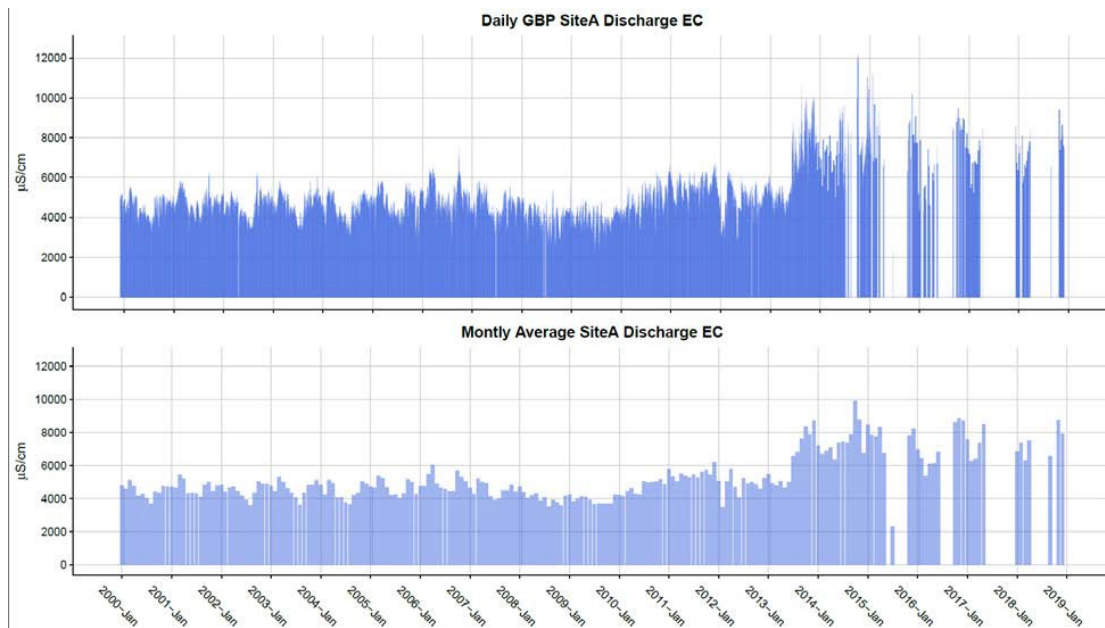


Figure 1 Electrical conductivity (EC) of discharges from Grassland Bypass Project (GBP) (2000 – 2019)

The Proposed and Existing Monitoring and Reporting Programs for the GBP are not sufficient to assess Environmental Impacts and Protect Beneficial Uses.

The GBP monitoring and reporting program was revised by USBR³⁷ in violation of the terms of the current San Luis Drain Use Agreement contract which states on @ pg 19-20 of Appendix A of the Final GBP EIS/R: *“The monitoring program shall consist of the monitoring program established by the parties during the 2001 Use Agreement, as such program may be modified by the parties after consultation with the agencies represented by the Oversight Committee. The Oversight Committee in consultation with the AUTHORITY shall resolve disagreement as to proposed modifications.”*³⁸ The Oversight Committee was never convened to address the concerns raised by USFWS and submitted to the Regional Board (discussed below). Further in violation of Federal Advisory Management Committee rules, despite requests for notification and participation, the public was excluded from the few meetings of Data Technical Group that were held along with the Oversight Committee.

The monitoring and reporting requirements for GBP were revised by the Regional Board in 2015³⁹ without compliance with the current Use Agreement contract provisions. These monitoring revisions are not adequate to determine the level of pollution being discharged by the GBP and adjacent agricultural lands, and the harm it is causing to the environment. We have provided comments three times on the inadequacies of the Revised Monitoring and Reporting Program for the GBP. We hereby incorporate by reference our coalition letters of August 11, 2011, April 22, 2013, and November 26, 2013, and June 22, 2015. We also refer to comments submitted to the Regional Board by USFWS on the Revised Monitoring

³⁷ See https://www.usbr.gov/mp/grassland/documents/gbp_2013_rev_mon_plan.pdf

³⁸ See Appendix A, Agreement for Continued Use of the San Luis Drain for the Period January 1, 2010 through December 31, 2019 available at: https://www.usbr.gov/mp/nepa/nepa_project_details.php?Project_ID=3513

³⁹ https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/fresno/r5-2015-0094.pdf

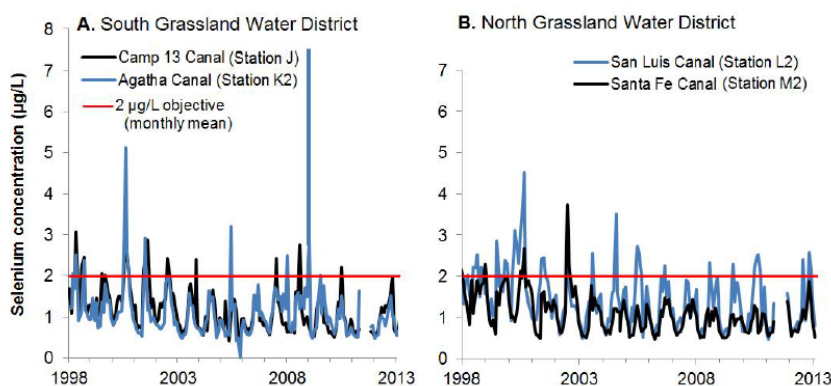
and Reporting Program for the GBP dated June 22, 2015 and June 25, 2015.⁴⁰ The USFWS recommended that the Regional Board reinstate weekly water quality monitoring for selenium at GBP Stations J, K, and L2 as exceedences of 2 µg/L are still occurring in those wetland channels, those channels are listed on the State's 303(d) list as impaired for selenium, and elevated selenium in those channels could be resulting in harm to federally listed species.

Absent compliance with the existing Use Agreement, as part of Regional Board **ORDER R5-2015-0094**, Waste Discharge Requirements for the GBP (2015 WDR), sampling frequencies for Mud Slough, Grasslands wetland channels, and Salt Slough were reduced or completely eliminated. Stations A, B, C, I2, F, J, K, L/L2, M/M2, G and H have all been eliminated from required monitoring. The Grasslands Marshes (wetland supply channels) remain on the 303(d) list as impaired for selenium, so reducing water quality monitoring in these channels to only during stormwater events is inexplicable. As denoted in Figure 12 of Attachment A to the Tentative WDRs for the GBP Stormwater Plan, significant spikes of selenium above water quality objectives in the Grasslands wetland channels were still being documented up through 2013 when monitoring in those channels ended.⁴¹

Attachment A to Order R5-2015-0094-01 (TENTATIVE)
Grassland Drainage Area
Information Sheet

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Figure 12: Selenium Concentrations in Wetland Supply Channels



In 2002 the Regional Board issued a report reviewing selenium concentrations in the Grasslands wetland water supply channels (Eppinger and Chilcott 2002). This report documented sources of selenium contamination in these channels that are not being monitored or addressed by the GBP:

⁴⁰https://www.waterboards.ca.gov/centralvalley/water_issues/grassland_bypass/wdrs_development_archive/2015may/2015_05_gbp_com_usfws.pdf and see this link for a copy of the USFWS letter to Ms. Margaret Wong Regional Water Quality Control Board, Central Valley Region: USFWS Comments on the May 2015 Draft Waste Discharge Requirements for the Surface Water Discharges from the Grassland Bypass Project and the Discharges to Groundwater from the Growers in the Grassland Drainage Area @ <http://calsport.org/news/wpcontent/uploads/Exhibit-5.pdf>

⁴¹Available at these links:

https://www.waterboards.ca.gov/centralvalley/board_decisions/tentative_orders/grassland/r5-2015-0094-01_tent_wdr.pdf
https://www.waterboards.ca.gov/centralvalley/board_decisions/tentative_orders/grassland/r5-2015-0094-01_tentwdr_noph.pdf

"Two areas have been identified where agricultural subsurface drainage can enter wetland water supply canals from farmland not contained in the DPA [Grasslands Drainage Area]. One area is west of the wetland water supply channels and historically drained into the Almond Drive Drain. Since Water Year 1999, these discharges have been collected in the CCID Main Drain and diverted into the CCID Main Canal downstream of internal supply channels. Data for Water Years 1999 and 2000 is not available for the Almond Drain site.

The second area where agricultural subsurface drainage can enter wetland water supply canals from outside the DPA is a triangle-shaped area of approximately 7,000 acres south of the Poso Drain (also known as the Rice Drain) and north of the DPA. This area historically drained into the Poso Drain, entering South Grassland Water District from the east. Three sites on the Poso (Rice) Drain were monitored for selenium during Water Years 1999 and 2000. Selenium concentrations at all three sites were above 2 ug/L a majority of the time, though a change in tail water management after June 1999 has apparently helped to reduce and stabilize concentrations...

During Water Year 1999, selenium concentrations in the Poso Drain were highly variable with concentrations at the upstream Russell Boulevard site ranging from <2 ug/L to 39 ug/L and concentrations at the downstream site (Mallard Road) ranging from <2 ug/L to 24 ug/L...After June 1999, more tail water was discharged through the Rice [Poso] Drain at Russell...Mean selenium concentrations continued to remain above 2 ug/L at all the Rice Drain sites."

The 2009 EIS/R for the GBP noted the following with respect to these lands that continue to discharge drainage directly into the Grassland wetland supply channels that are outside of the DPA:

"The GDA does not include the lands that are described, and they are not under the jurisdiction of the Grassland Basin Drainers (GBD). Additionally, the GBD have no authority to compel these lands to become part of the GBP. However, the GBD will work with the landowners in the areas described to encourage management of drain waters that may contain selenium that is entering wetland supply channels and specifically will work with the 1,100 acres of lands that are identified as lands that "... could be annexed to the GDA."

Unfortunately, nothing has been done to bring these lands into the jurisdiction of the GBP and they are not included in the DEA or the GBP Stormwater Plan. With the exception of stormwater events, these sources of drainage-water contamination in wetland supply channels are currently not being regulated or monitored. The additive effects of these uncontrolled discharges on Salt Slough and the San Joaquin River need to be considered together with the effects of the San Luis Drain discharges to Mud Slough as allowed in the Use Agreement.

In addition, we specifically protested the change in the Hills Ferry monitoring site (Site H) to China Island (Site R). There is a comprehensive database with documented selenium water quality violations at Hills Ferry. Site R appears closer to the mouth of the Merced River than Site H, allowing for greater dilution and underrepresenting the contaminant threat in the San Joaquin River upstream of the Merced River.

We also opposed Reclamation's changes to the GBP monitoring and reporting program in 2013 and recommended a more robust monitoring plan similar to the required 2001 GBP monitoring requirements under the existing use agreement. The reduction in monitoring frequency and locations will prevent the collection of necessary data sufficient to protect public trust values, endangered species and evaluate compliance with water quality standards. Here we reference and reiterate our previous comments and recommend a vigorous monitoring program that does not hide or understate the discharge of selenium and other toxins through stormwater discharges into Mud Slough and the San Joaquin River.

We further recommend that monitoring and reporting for total mercury and methyl-mercury concentrations in water and biotic tissue be required at all sampling locations of the GBP to establish a mass-balance of sources of mercury in this watershed.

The DEA fails to Disclose All the Sources and Impacts of the Proposed Discharges into San Luis Drain

The DEA only assesses the effects of GBP discharges into the San Luis Drain. The GBP's San Joaquin River Improvement Project (SJRIP) drainage reuse area and proposed expansion and proposed stormwater detention basins in the GBP Stormwater Plan are inexplicably excluded from the scope of the DEA. Reclamation arbitrarily eliminated the SJRIP and stormwater detention basins from their analysis in the DEA, even though the SJRIP has been part of previous GBP NEPA reviews. Although the GBP drainers are receiving State funds to implement some improvements at the SJRIP, Reclamation continues to fund drainage activities through contract agreements⁴², and USBR is obligated to provide drainage service through the CVP water contracts. Further, six drainage sumps that historically discharged drainage into the Delta Mendota Canal were diverted to be managed in the SJRIP. This action is included in a License to Panoche Drainage District to connect the Firebaugh Sumps to the SJRIP⁴³ and is an included activity as part of the San Luis and Delta Mendota Water Authority's Operations and Maintenance Activities on federal facilities.⁴⁴

The proposed GBP Stormwater Plan includes use of an unspecified acreage of existing ponds and the addition of up to 200 acres of stormwater detention basins (regulating reservoirs) to store and regulate disposal or distribution of stormwater. How is such a basin different from an evaporation pond? Proposed use of regulating ponds to help control flow as a part of the engineered reuse system and ponding during flood events in the GBP area also may create a potential wildlife exposure risk similar to those originally realized at Kesterson National Wildlife Refuge (Presser and Ohlendorf, 1987). Ponding of stormwater and agricultural drainage will support an aquatic food chain and be attractive hazard to birds within a short period of time.

Selenium poses a hazard to fish and wildlife because of its toxicity at environmentally relevant concentrations and its tendency to accumulate in food chains (Skorupa, 1998). The San Joaquin Valley provides critically important habitat for wintering waterfowl of the Pacific Flyway. Eight to twelve million ducks and geese, along with hundreds of thousands of shorebirds and other marsh birds annually winter or pass through the valley. The history of the ecological impacts of disposal of selenium at Kesterson National Wildlife Refuge within the valley is well documented (e.g., Presser and Ohlendorf, 1987; SJVDP, 1990a, b). Additionally, from 1986 to 1993, the National Irrigation Water-Quality Program (NIWQP) of the U.S. Department of the Interior (USDOI) studied whether contamination was induced by irrigation drainage in 26 areas of the western United States. This program developed guidelines to interpret effects on biota of selenium (USDOI, 1998). These guidelines, along with revisions based on more recent studies and modeling, can be used to interpret and guide management and mitigation of the

⁴² See Federal Status Report of October 1, 2019 Case 1:88-cv-00634-LJO-SKO Document 1037 Filed 10/01/19.

⁴³ See https://www.usbr.gov/mp/nepa/includes/documentShow.php?Doc_ID=18761

⁴⁴ See <https://www.usbr.gov/mp/sccao/water-contracting.html>

risk of selenium in food chains and wildlife.⁴⁵ The GBP reuse areas present opportunities for wildlife use and selenium exposure. Proposed use of regulating ponds to help control flow as a part of the engineered reuse system and ponding during stormwater events in the GBP area also may create a potential wildlife exposure risk similar to those originally realized at Kesterson National Wildlife Refuge⁴⁶ (Presser and Ohlendorf, 1987).

The GBP has been monitoring and reporting annual bird use from April thru June at the SJRIP drainage reuse area since 2008. Many of those reports are posted on the SFEI website, however, no reports have been posted since the 2015 report. We note that additional reports were made available during the public comment period at this website.⁴⁷

The 2017 wildlife monitoring report for the GBP drainage reuse area (SJRIP) documented 50 avian species were observed at the drainage reuse area between April 13 and June 21, 2017. Eighteen species either were observed nesting or were suspected of nesting, including Swainson's hawk, a species listed by the State of California as a threatened. Twelve of the species observed—spotted sandpiper, least sandpiper, whimbrel, western wood-peewee, willow flycatcher, American pipit, savannah sparrow, White-crowned sparrow, common yellowthroat, yellow warbler, Wilson's warbler, and western tanager—were present only as spring Migrants.⁴⁸

The 2019 CEQA Addendum for the GBP Stormwater Plan notes that the filling of these stormwater detention basins will begin with the first significant storm (typically December), and basins will be emptied by May. So, the potential is that stormwater commingled with drainage water will be stored in basins for up to 6 months! If these basins will hold water longer than 30 days, a state water permit is required (CCR, Title 23, Sec. 657-658). As described in Skorupa et al (2004), low winter temperatures substantially increase the toxicity of dietary selenium to birds, fish, and mammals (referred to as winter stress). And the SJRIP wildlife monitoring reports do document use of the drainage reuse area by a large number of avian species (50 in 2017), including twelve species that are spring migrants.

It appears evident that there is a federal nexus to the SJRIP and associated drainage activities. We recommend, therefore, that the effects of disposal of selenium in the SJRIP and stormwater detention basins be included in a full EIS analysis. Such an analysis should include an assessment of the effects of selenium exposure and associated winter stress to migratory birds using the SJRIP or detention basins.

NEPA Compliance Demands Biological Monitoring Requirements, Performance Standards, and Enforcement and Mitigation Provisions for Disposal of Agricultural Drainage at the SJRIP Reuse Area and Stormwater Detention Basins.

The GBP Stormwater Plan EIR Addendum includes a proposed expansion of the existing drainage reuse area from 6,100 acres analyzed in the 2009 EIR/EIS to 7,550 acres of reuse area and increase in acreage of 1,450 acres. The addition of acreage was not analyzed in the 2009 EIR/EIS. Reuse of polluted drainage in reuse areas does not eliminate the loading of wastes. It simply stockpiles wastes on land. The continued recycling of agricultural drainage will ultimately turn vast areas of the Central Valley into salted up

⁴⁵ See <https://pubs.usgs.gov/pp/p1646/>

⁴⁶ See <https://pubs.usgs.gov/of/2008/1210/>

⁴⁷ <http://www.summerseng.com/grasslandbypassproject.htm>

⁴⁸ <https://drive.google.com/file/d/1mudCtShFmoQ-RW0YJaVF2-oia2TIXqn5/view>

wastelands. The practice of drainage reuse is not sustainable and will inevitably lead to permanent fallowing of more and more land.

One significant environmental concern at the SJRIP is ponding of seleniferous drainage water within the fields of the reuse area. The GBP Stormwater Plan EIR addendum includes mention of a contingency plan in the event of inadvertent flooding, but only a reference to the plan, not the plan itself, is included in the EIR Addendum. Bird use, already showing impacts under current acreage, would increase in the vicinity of the SJRIP with the addition of stormwater detention basins. This expansion of the SJRIP should be included as part of the proposed action in a full EIS for the Use Agreement.

The GBP SJRIP reuse area already poses exposure risks to wildlife from selenium exposure. The use of regulating ponds to help control flow as a part of the engineered reuse system and ponding during stormwater events in the GBP area also creates a potential wildlife exposure risk similar to those originally realized at Kesterson National Wildlife Refuge (Presser and Ohlendorf, 1987).⁴⁹

Further, the 2017 SJRIP Wildlife Monitoring Report noted that the mitigation site for the SJRIP, which was supposed to provide compensation for avian exposure at the SJRIP, documented extremely elevated selenium concentrations in some bird eggs collected there. This suggests that the mitigation site is not providing compensation benefit for the SJRIP and also highlights the breadth of selenium contamination and wildlife exposure in this area.⁵⁰

Table 5. Selenium Concentrations in Recurvirostrid Eggs from the Mitigation Site in 2017

ID Number	Field Number ¹	Date	Embryo ²		Embryo Age (days)	Selenium (ppm, dry wt) ³	Log	
			Condition	Status			Base 10	Anti-Log
Black-Necked Stilt								
PM-01	MS-01	June 9	U	U	1	3.74	0.5729	
PM-02	MS-02	June 9	L	N	13	4.52	0.6551	
PM-03	MS-03	June 9	U	U	1	5.54	0.7435	
American Avocet								
PM-04	MA-01	June 9	L	N	9	51.1	1.7081	
PM-05	MA-02	June 9	U	U	1	8.7	0.9395	
Arithmetic/ <i>geometric mean</i>						14.7	0.9238	8.4
Standard deviation						20.4	0.4591	2.9
Standard error							0.2053	1.6
Lower limit of 95% confidence interval							0.5214	3.3
Upper limit of 95% confidence interval							1.3263	21.2

¹ See Appendix H.

² L = live; N = normal; U = unknown.

³ ppm, dry wt = parts per million dry weight.

⁴⁹ Available at: <https://pubs.usgs.gov/of/2008/1210/> *Technical Analysis of In-Valley Drainage Management Strategies for the Western San Joaquin Valley, California* by Theresa S. Presser and Steven E. Schwarzbach, U.S. Geological Survey Open-File Report 2008-1210 version 1.0.

⁵⁰ *Ibid.* page 20.

NEPA Demands Full Disclosure of Treatment Methods that Have Not Operated Effectively.

The 2006 EIS for SLDFR and the 2009 EIR/EIS for the GBP included treatment as a significant component of the plan to manage drainage and reduce brine volumes to be discharged or disposed of. Reclamation has promoted and funded drainage treatment solutions for decades with repeated operational failures and unreliable results. Both the 2006 SLDFR EIS and the 2009 GBP EIS/R included a bio-treatment plant to reduce the selenium load being discharged, and to ultimately achieve zero discharge of agricultural drainage to the San Luis Drain and San Joaquin River.

In 2012, construction began of the SLDFR Demonstration Treatment Plant (Demo-Plant) in Panoche Drainage District. The purpose of the Demo-Plant was to demonstrate and operate water treatment processes to collect cost and performance data for the design of a full-scale water treatment facility to be constructed in Westlands. The Demo-Plant was completed in 2014 but did not operate consistently due to operational failures and faulty design. The treatment plant has yet to become operational.⁵¹

The Department of Interior's Inspector General issued a report in November 2019 that finalized their investigation on the Demo-Plant.⁵² The Inspector General found that the Demo-Plant did not provide the agricultural drainage service that is required by statute and it did not consistently meet operational performance criteria. In addition, the USBR was found to not have provided effective oversight of the cooperative agreement for operation and maintenance of the Demo-Plant. As a result, USBR spent a reported \$67.8 million for a project that does not meet its legal obligation and that had not consistently met operation performance goals. Warned of fraud, the Inspector General found that "work at the "pilot" Demo-Plant included: "invalid single audits, conflicts of interest with key personnel, a general absence of project oversight, and questionable use of a cooperative agreement as the legal instrument." The Inspector General also raised federal fraudulent funding issues, stating: *"We also question how and why the project grew from a pilot-scale \$15 million demonstration and research and development plant to a full-size \$37 million plant. Further, we have been told that the costs to operate and maintain the plant could outweigh the benefits of the treated water produced."*⁵³

All action alternatives in the SLDFR FEIS included bio-treatment and reverse osmosis treatment as a large part of the schematic to manage drainage for the San Luis Unit. Since the Demo-Plant has yet to work reliably, the viability and costs of the drainage plans put forth in the SLDFR ROD and in the GBP Stormwater Plan are questionable. Without treatment, how will drainage volumes and selenium loads be managed into the future?

Upper Watershed Selenium Monitoring System Never was Implemented in Violation of the Current Use Agreement.

Appendix G of the 2010 Use Agreement @ pg 42 references an "Upper Watershed Exemption" that requires an "Upper Watershed Selenium Monitoring System". The Use Agreement stipulates that "no amount of discharge will be exempted pursuant to Appendix G until an Upper Watershed Selenium Monitoring System has been developed as described in this Appendix and submitted to and approved by

⁵¹ Federal Status Report of October 1, 2019 Case 1:88-cv-00634-LJO-SKO Document 1037 Filed 10/01/19.

⁵² See <https://www.doioig.gov/reports/bureau-reclamation-did-not-effectively-manage-san-luis-demonstration-treatment-plant>

⁵³ See https://www.doioig.gov/sites/doioig.gov/files/ManagementAdvisory_ProposedModification_112717.pdf

the Oversight Committee.” Yet the Oversight Committee has not met in over a decade, and there is no mention of this Upper Watershed Selenium Monitoring System in the WDR.

Long term viability and legality of GBP Drainers' Proposed Actions.

The DEA authorizing 10 years of adding the discharge of polluted stormwater raises questions regarding the long-term viability of the actions proposed in the GBP Stormwater Plan. The 2009 EIR/EIS relied on unproven treatment technologies to treat and reduce the volume of drainage from the GBP that would need to be disposed of. These treatment technologies have yet to prove reliable or cost effective. Without treatment, how will drainage volumes and selenium loads be managed at the SJRIP? Can the SJRIP remain viable after 25 additional years (the time period considered in the GBP Stormwater Plan EIR Addendum) of irrigation with selenium and salt-laden drainage? What is the life of the reuse area before too much salt accumulation prevents future agricultural use? Where is the selenium and salt that is accumulated in the SJRIP ultimately disposed of? All of these questions need to be evaluated in a full EIR/EIS. Dubbed a treatment area, the SJRIP is looking more and more like an unpermitted selenium and salt disposal facility.

Reuse of polluted drainage in the GBP's SJRIP drainage reuse area won't eliminate the loading of wastes. It is simply stockpiling wastes on land. The continued recycling of agricultural drainage will ultimately turn vast areas of the Central Valley into wastelands. The practice of drainage reuse is not sustainable and will inevitably lead to having to permanently fallow more and more land.

Land Retirement is the Most Effective Management Strategy.

Our organizations have previously submitted comments to the Regional Board about the success of land retirement in relation to the GBP's drainage volume load reductions.⁵⁴ The USBR's 2004 Broadview Water Contract Assignment Draft Environmental Assessment cites Summer's Engineering as predicting a load reduction of 17,000 tons of salt, 1,500 pounds of selenium, and 52,000 pounds of boron to the San Joaquin River each year from the cessation of irrigation on 9,200 acres of agricultural land in Broadview Water District as per Table 4-1 below (USBR 2004). This amounts to a per acre reduction of 0.28 AF of drainage, 1.85 tons of salt, 0.16 pounds of selenium and 5.65 pounds of boron.

**TABLE 4-1
DRAINAGE AND WATER QUALITY EFFECTS OF PROPOSED ACTION ON THE
SAN JOAQUIN RIVER**

	Existing Conditions	Under Proposed Action Conditions	Estimated Reduction Attributable to Proposed Action
BWD Drainage to San Joaquin River (afy)	3,700	1,100	2,600
BWD Estimated Salt Production (tons/yr)	24,300	7,300	17,000
BWD Estimated Selenium Production (lbs/yr)	2,140	640	1,500
BWD Estimated Boron Production (lbs/yr)	74,000	22,000	52,000

Source: Summers Engineering, 2003

⁵⁴ See Coalition letter to CVRWQCB on Selenium Basin Plan Amendment, April 26, 2010, p 15-16; available at http://www.waterboards.ca.gov/centralvalley/water_issues/grassland_bypass/grasslands_bpa_coalition_ltr.pdf, and Coalition letter to Karl Longley on Land Retirement Benefits to Grasslands Bypass Project and Draft Waste Discharge Requirements: available at <http://calsport.org/news/wp-content/uploads/Coalitionresponse-letter-to-Longley-re-gbpland-retirement.pdf>.

Land retirement likely accounted for most of the reductions in selenium, and the majority of reductions in drainage volume, boron, and salt claimed by the Grasslands Bypass Project in the 2009 EIR/EIS.

The USEPA, in a letter regarding the Bay Delta Conservation Plan,⁵⁵ strongly recommended the USBR's Land Retirement Program be revived to save water and prevent further selenium contamination and impacts to endangered species (page 13):

Recommendations: *To mitigate for the project's impacts to selenium levels in the estuary as a result of the BDCP operations, consider reviving and funding the Bureau of Reclamation's Land Retirement Program¹⁷ to remove from cultivation and irrigation large areas of selenium laden lands on the West side of the San Joaquin Valley. This would save irrigation water, reduce discharges of selenium into the San Joaquin River basin, and advance attainment of selenium reduction targets¹⁸ set by EPA and the Central Valley Regional Water Quality Control Board. Evaluate the extent to which restoration of these "retired" lands to the native plant community could also contribute to the recovery of threatened and endangered plants and animals listed by FWS. Consider analyzing the cost/benefit of implementing treatment technologies vs. land retirement. Although cost/benefit analyses are not required under NEPA, such an analysis may be useful to decision makers and the public in this case."*

Further, the USBR's San Luis Drainage Feature Re-Evaluation (SLDFRE) Final EIS in 2006 found that land retirement was the most cost-effective solution to managing drainage in the San Luis Unit. Three land alternatives were evaluated in the SLDFRE EIS, 306,000 acres, 194,000 acres and 100,000 acres, respectively. The Final EIS found that the only environmentally and economically preferred alternative was to retire 306,000 acres (In-Valley/Drainage Impaired Area Land Retirement).⁵⁶ It's clear from the NED findings in Table N-10 below that additional land retirement would provide increased net economic benefits.

Table N-10
Benefit/Cost Summary
Changes Relative to the No Action Alternative (\$/year in 2050)

Subarea	In-Valley Disposal	Out-of-Valley Disposal	In-Valley/ Groundwater Quality Land Retirement	In-Valley/ Water Needs Land Retirement	In-Valley/ Drainage- Impaired Area Land Retirement
Total NED Benefit	\$37,962,000	\$38,430,000	\$31,164,000	\$20,629,000	\$9,931,000
Total NED Cost	51,225,000	51,370,000	46,767,000	30,778,000	6,288,000
Net NED Benefit	-\$13,263,000	-\$12,940,000	-\$15,603,000	-\$10,149,000	\$3,643,000

Notes:

Values represent net NED benefits relative to No Action.

Values rounded to nearest \$1,000. Totals may not add due to rounding.

Moreover, the US Fish and Wildlife Service, in their Fish and Wildlife Coordination Act Report (FWCAR) for SLDFRE, recommended that all of the northerly area within the San Luis Unit (GBP Drainage Area) be retired as well,⁵⁷ though USBR did not consider that alternative. The Service concluded on page 67 of the FWCAR that, "[t]o avoid and minimize risks and effects to fish and wildlife

⁵⁵ Available at <http://calsport.org/news/wp-content/uploads/bay-delta-conservation-plan-deis.pdf>.

⁵⁶ SLDFRE Final EIS, Appendix N, Table N-10, page N-17, accessed at https://www.usbr.gov/mp/nepa/includes/documentShow.php?Doc_ID=2240

⁵⁷ SLDFRE Final EIS, Appendix M, USFWS FWCAR, accessed at https://www.usbr.gov/mp/nepa/includes/documentShow.php?Doc_ID=2236

resources in the San Joaquin Valley and Pacific Flyway, the Service recommends land retirement on all drainage impaired lands in the SLU. This approach would maximize the elimination of drainage at its source, and therefore avoidance of adverse fish and wildlife effects.”

By ignoring permanent land retirement and the associated benefits of reducing water exports to these toxic soils, the DEA, and GBP Stormwater Plan Addendum and associated Tentative WDRs will continue to kick the can down the road and concentrate and store salt, selenium, boron and other toxic substances in the shallow aquifers of the Grasslands area. This creates an ongoing risk of toxic selenium discharges to wetland water supply channels, Mud Slough, the San Joaquin River, and the Bay-Delta estuary, especially in wetter years.

Conclusion

We urge that all polluted discharges of agricultural drainwater and stormwater cease as required under the 2009 GBP EIS/R. We recommend land retirement and curtailing the importation of additional water supplies that mobilize these contaminants on the west side of the Southern San Joaquin Valley. Despite repeated promises, no viable treatment has been developed in the more than two decades. Before proceeding to load even more contaminants on downstream beneficial uses, we recommend no new Use Agreement for the San Luis Drain authorizing further discharges of either stormwater, agricultural drainage, or contaminated groundwater be permitted until a full EIS/EIR be completed. That EIS/EIR should include:

- A copy of the new Use Agreement for the San Luis Drain;
- Copies of the ESA consultations from NMFS and USFWS;
- Expansion of the scope of the proposed action to include drainage management activities at the SJRIP and stormwater detention basins;
- A National Pollutant Discharge System Permit prior to any additional use of the federal San Luis drain for discharge of contaminants from the west side into the San Joaquin River and Delta Estuary;
- A comprehensive cumulative effects analysis of stormwater and drainage disposal into Mud Slough and the San Joaquin River and Delta Estuary;
- A chronic, legally binding selenium objective of no greater than 2 µg/L (4-day average) for receiving waters of stormwater/drainage discharges;
- No exceedance of the 2 µg/L selenium water criterion should be allowed. If it is exceeded, enforcement mechanisms should trigger all discharges to cease and require additional biological monitoring to determine if there are downstream effects to meeting tissue criteria for selenium proposed by USEPA in 2016 (for the Bay Delta);
- An analysis of effects to wildlife, including factors such as winter stress, of disposal of selenium in the SJRIP and stormwater detention basins;
- Environmental commitments that include biological monitoring, performance standards, consequences if those performance standards are exceeded, and mitigation provisions for disposal of agricultural drainage at the SJRIP reuse area and stormwater detention basins;
- A description of the status and viability of drainage treatment at the SJRIP;
- A description and evaluation of the long-term viability of drainage disposal strategies at the SJRIP and a description of where salt, selenium, and other contaminants accumulate and are ultimately disposed of. This should not become an unregulated dumping ground for west-side contaminants.

Finally, Congress in its authorization of the San Luis Unit in 1960 never envisioned use of the

San Luis Drain for stormwater discharge. Congress provided its authorization under specified conditions, including approval by the State of California⁵⁸ for “...provision for constructing the San Luis interceptor drain to the Delta designed to meet the drainage requirements of the San Luis unit...” *Senate Report No 154, page 2, San Luis Unit, Central Valley Project, California, April 8, 1959.*⁵⁹ This brings into question whether the “Drain” can be legally used for storm water discharge without Congressional approval. And further Section 3404 of the Central Valley Project Improvement Act requires the Secretary to administer all existing, new and renewed contracts in conformance with the requirements and goals of the CVPIA. A full NEPA review is required along with mitigation measures and adherence to water quality standards to protect fish and wildlife.

The use of the federal San Luis Drain for stormwater also raises consistency questions with existing State Board orders. The California State Water Resources Control Board (SWRCB 1985), following the Kesterson debacle, issued its Order WQ 85-1 in February 1985. The SWRCB found that agricultural drainage and wastewater reaching Kesterson Reservoir “is creating and threatening to create conditions of pollution and nuisance” (Emphasis added). The Order then warned, “[i]f the Bureau closes Kesterson Reservoir and continues to supply irrigation water to Westlands Water District without implementing an adequate disposal option, continued irrigation in the affected area of Westlands Water District could constitute an unreasonable use of water” (Emphasis added). We urge Reclamation to not repeat the mistakes made at Kesterson Reservoir in the 1980’s. The continued irrigation of toxic soils in the GBP area constitutes an unreasonable use of water and continued and future disposal of agricultural drainage in ponds, on land, and in surface waters will cause significant harm to public trust resources and violates non-degradation policies.

Thank you for your consideration,



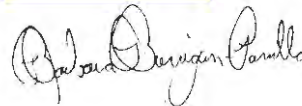
Jonas Minton
Senior Water Policy Advisor
[Planning and Conservation League](mailto:jminton@pcl.org)
jminton@pcl.org



Noah Oppenheim
Executive Director
[Pacific Coast Federation of Fishermen’s Asso.](mailto:noah@ifrfish.org)
noah@ifrfish.org



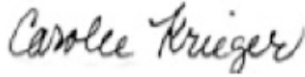
John McManus
President
Golden State Salmon Association
john@goldengatesalmon.org



Barbara Barrigan-Parrilla
Director
Restore the Delta
Barbara@restorethedelta.org

⁵⁸ See PL86-488 San Luis Act June 3, 1960: Proviso: (2) *received satisfactory assurance from the State of California that it will make provision for a master drainage outlet and disposal channel for the San Joaquin Valley,which will adequately serve, by connection therewith, the drainage system for the San Luis unit or has made provision for constructing the San Luis interceptor drain to the delta designed to meet the drainage requirements of the San Luis unit as generally outlined in the report of the Department of the Interior, entitled "San Luis Unit, Central Valley Project," dated December 17, 1956.* The State of California has not made such a provision and Congress never consider the use of the drain for stormwater.

⁵⁹ See H. Rpt 399, available at <http://calsport.org/news/wp-content/uploads/Exhibit-3.pdf> S. Rpt 154...<http://calsport.org/news/wp-content/uploads/Exhibit-4.pdf>.



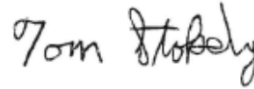
Carolee Krieger
Executive Director
California Water Impact Network
caroleekrieger7@gmail.com



Lowell Ashbaugh
Conservation Chair
The Fly Fishers of Davis
ashbaugh.lowell@gmail.com



Conner Everts
Executive Director
Environmental Water Caucus
Southern California Watershed Alliance
[Environmental Water Caucus
connere@gmail.com](mailto:connere@gmail.com)



Tom Stokely
Director
Save California Salmon
tgstoked@gmail.com



Bill Jennings
Chairman Executive Director
California Sportfishing Protection Alliance
deltakeep@me.com



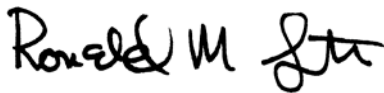
Barbara Vlamis,
Executive Director
AquAlliance
barbarav@aqualliance.net



Stephen Green
President
Save the American River Association
gsg444@sbcglobal.net



Lloyd G. Carter
President, Board of Directors
California Save Our Streams Council
lcarter0i@comcast.net



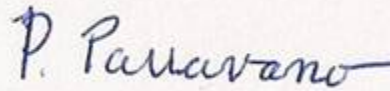
Ron Stork
Senior Policy Advocate
Friends of the River
rstork@friendsoftheriver.org



Larry Collins
Senior Advisor
Crab Boat Owners Association
papaduck8@gmail.com



Kathryn Phillips
Director
Sierra Club California
kathryn.phillips@sierraclub.org



Pietro Parravano
President
Institute for Fisheries Resources
pietro15@comcast.net



Dr. C. Mark Rockwell, D.C.
President & Conservation VP,
Northern California Council, Fly Fishers International
mrockwell1945@gmail.com



Frank Egger
President
North Coast Rivers Alliance
fegger@pacbell.net



Caleen Sisk
Chief and Spiritual Leader of the
[Winnemem Wintu Tribe](http://WinnememWintuTribe.com)
caleenwintu@gmail.com

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Appendix B: U.S. Fish and Wildlife Service Concurrence Memorandum



In Reply Refer to:
08ESMF00-
2019-I-3194

United States Department of the Interior

2019 DEC 19 AM 7:54

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Suite W-2605
Sacramento, California 95825-1846



2019 DEC 19 AM 7:54

DEC 16 2019

Memorandum

To: David Hyatt, Chief, Resources Management Division, Mid-Pacific Region South-Central California Area Office

From: Patricia Cole, Chief, San Joaquin Valley Division, Sacramento Fish and Wildlife Office, Sacramento, California *Patricia Cole*

Subject: Informal Consultation on the Long-term Stormwater Management Plan for the Grasslands Drainage Area (19-029), Merced and Fresno Counties, California

This memorandum is in response to your August 21, 2019, request for initiation of informal consultation with the U.S. Fish and Wildlife Service (Service) on the Long-term Stormwater Management Plan for the Grasslands Drainage Area (19-029) (proposed project) in Merced and Fresno Counties, California. At issue are the potential effects of the proposed project on the federally-listed as threatened giant gartersnake (*Thamnophis gigas*). This response is provided under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. § 1531 *et seq.*) (Act), and in accordance with the implementing regulations pertaining to interagency cooperation (50 CFR 402).

The federal action on which we are consulting is the proposed long-term management of stormwater generated in the 97,400-acre Grassland Drainage Area (Drainage Area) by allowing the conveyance of up to 150 cubic-feet-per-second of stormwater flows through the San Luis Drain for a 10-year period. The U.S. Bureau of Reclamation (Reclamation) has requested concurrence with the conclusion the proposed project may affect, but is not likely to adversely affect (NLAA) the giant gartersnake.

Reclamation has requested initiation of informal consultation under the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act). Our response is based on the following information: (1) an initial biological assessment (BA); (2) a consultation request letter dated August 21, 2019; (3) an email received September 9, 2019, responding to additional questions about the proposed project; additional information detailing the monitoring program received on December 6, 2019; and (4) other information available to the Service.

Project Description

The Grassland Basin Drainers, in association with the San Luis & Delta-Mendota Water Authority (Authority), have proposed a plan for the long-term management of stormwater generated in the 97,400-acre Grassland Drainage Area (Drainage Area). Previously, stormwater flows have been managed as part of the Grassland Bypass Project (GBP), as outlined in the California Regional

Water Quality Control Board Order No. R5-2015-0094. The GBP has been subject to previous review under the Federal Endangered Species Act, the California Environmental Quality Act, and the National Environmental Policy Act, including preparation and certification of the Final Environmental Impact Statement and Environmental Impact Report for the Grassland Bypass Project 2010-2019 (GBP Final EIS/EIR).

Historically, farms in the Drainage Area discharged drainwater through local wetland water supply channels to the San Joaquin River. In 1996, the GBP was implemented to prevent the discharge of subsurface agricultural drainage into refuges and wetlands by conveying drainage water through the federally-owned San Luis Drain, into Mud Slough, and into the San Joaquin River. Since 2014, agricultural subsurface drainage has been managed in the San Joaquin River Water Quality Improvement Project (SJRIP) area and discharges into the San Joaquin River via the San Luis Drain and Mud Slough have only occurred during storm events during non-irrigation season. However, stormwater flows cannot be fully managed by the SJRIP as storm events occur in the winter when irrigation demand is minimal, and the ground is saturated by rain. The GBP will end on December 31, 2019, and agricultural drainage flows will continue to be managed in the SJRIP. The need to manage stormwater flows remains; therefore, the Authority has proposed to continue the practice of using the San Luis Drain to introduce and convey stormwater induced flows after the expiration of the GBP.

Under the proposed project, the Authority will continue to discharge stormwater, including storm induced drainwater, through the GBP from the Drainage Area; however, the volume of stormwater conveyed in the San Luis Drain could be reduced. Stormwater collected from the Drainage Area will be introduced through the Grassland Bypass Channel into the San Luis Drain, which will convey the stormwater to the drain's discharge point into Mud Slough, a tributary of the San Joaquin River. The Authority needs to address periodic flooding from overland and storm induced drainwater and to that end is proposing a Long-term Stormwater Management Plan for the Grasslands Drainage Area (Drainage Area). Storm flows contain elevated levels of naturally-occurring selenium, salts, and other constituents of concern. Unmanaged storm flows could spill into wetland channels that supply freshwater to wetlands and refuges and eventually into Mud Slough and the San Joaquin River.

Unmanaged storm flows could also lead to property damage and operational restrictions. Reclamation's proposed project, to approve the conveyance of storm water from the Drainage Area to Mud Slough (North) via the San Luis Drain, would help ensure that those scenarios are avoided. The proposed project will protect agricultural lands and infrastructure in the Drainage Area by eliminating or reducing damage from stormwater. Introduction and conveyance in the San Luis Drain will also prevent ponding of stormwater containing selenium. Absent implementation of the proposed project, such ponding could impact birds within and downstream of the Drainage Area and could impact soil and water quality within wetland areas and wildlife refuges. Federal facilities will not be modified under the proposed project and no ground disturbance will occur as a result of conveying stormwater through the San Luis Drain.

The proposed project area is located in the northwest portion of the San Joaquin Valley between Mendota and the San Joaquin River at Crow's Landing, California (Figure 1). The San Joaquin River forms the eastern and western boundaries at the northern end, Mendota and Interstate Highway 5 form the approximate boundaries at the southern end, and the San Luis Drain and Mud Slough bound the proposed project area in the central portion of the proposed project. This area consists of the Drainage Area as well as adjacent land to the north through which subsurface drainage has historically flowed.

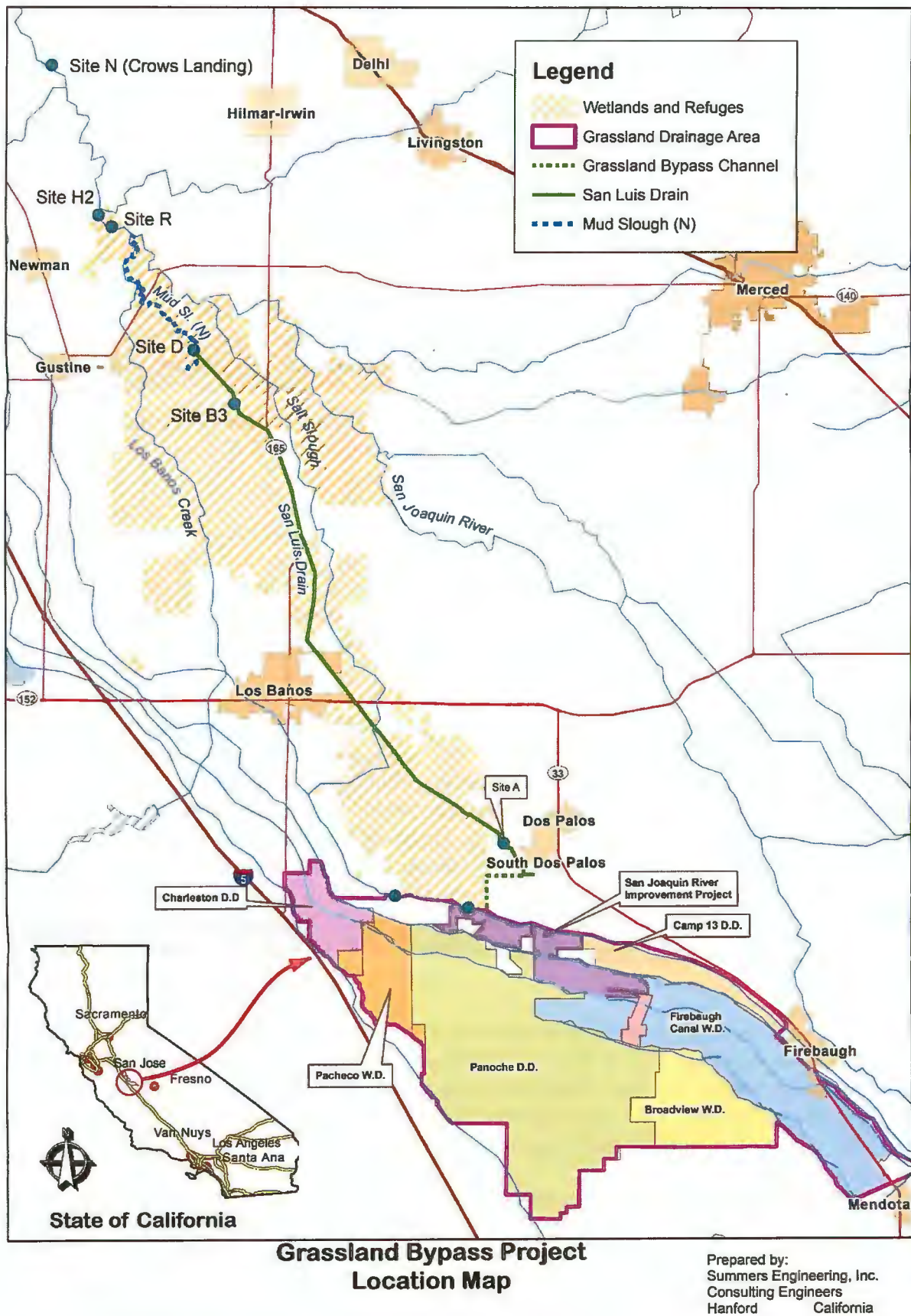


Figure 1. Proposed project area

The Drainage Area is 97,400 acres (39,417 hectares) and extends from south of Los Banos to the city of Mendota. The Drainage Area is mostly irrigated farmland with a few small communities. Crops grown within the Drainage Area include almonds, cotton, alfalfa, asparagus, melons, pistachios, pomegranates, and stone fruit. Irrigation canals cross the Drainage Area. The Drainage Area includes the San Joaquin River Improvement Project, located near South Dos Palos, which manages agricultural subsurface drain water from the Drainage Area. Within the proposed project area, water bodies that would convey stormwater away from the Drainage Area include the four-mile Grassland Bypass Channel, 28 miles of the San Luis Drain from Russell Avenue to its northern terminus at Mud Slough, six miles of Mud Slough upstream of its confluence with the San Joaquin River, and 14 miles of the San Joaquin River from Mud Slough to Crows Landing.

Crows Landing was chosen as the northern extent of the proposed project because Reclamation's water sampling at this site (daily sampling 2015 and 2016, weekly 2016 to present) has shown selenium levels to be below 2 µg/L (a benchmark threshold for concern for wildlife) since the cessation of drainwater being discharged through the GBP in 2014, with the following exceptions: five daily samples (March 26-28, 2015 and May 11 and 12, 2016) exceeded this level, the highest being 3.18 µg/L. The confluences of the Tuolumne and the Stanislaus Rivers shortly downstream will further dilute selenium levels below thresholds of concern.

Populations of the giant gartersnake in the vicinity of the proposed project can be represented by three areas; North Grasslands (wetland areas north of Los Banos), South Grasslands (wetland area south of Los Banos, and the Mendota area. Reported occurrences of giant gartersnake in this region originate south and west of the San Joaquin River where large wetland complexes are still maintained. A summary of the giant gartersnake survey efforts and results are detailed in the Biological Evaluation provided by Reclamation.

While portions of the San Luis Drain are adjacent to suitable habitat for giant gartersnake within the North and South Grasslands, the Drain with its concrete sides and compacted levee roads on both sides represents poor habitat conditions for this species. Additionally, water levels in the drain are unstable, periodically drying nearly or entirely, which further reduces the likelihood that giant gartersnakes would occupy the Drain. Consequently, within the proposed project area, no records exist for the species and giant gartersnakes are likely absent from the four-mile (6 kilometer) section of the Grassland Bypass Channel, 28 miles (45 kilometers) of the San Luis Drain from Russell Avenue to its northern terminus at Mud Slough, six miles of Mud Slough upstream of its confluence with the San Joaquin River, and 14 miles (23 kilometers) of the San Joaquin River from Mud Slough to Crows Landing.

Dietary uptake is the principle route of toxic exposure to selenium in wildlife. Giant garter snakes feed primarily on aquatic prey such as fish and amphibians. Fish sampling conducted by CDFW in the San Joaquin River below the Mud Slough confluence from 2016 through 2018 indicate that selenium levels in baitfish prey of the giant gartersnake is below the level of concern for dietary intake (3.0 µg/g [dry weight]) in the San Joaquin River portion of the proposed project area.

In 2018, a total of 10,887 acre feet of storm flows were discharged from the San Luis Drain to Mud Slough (North) from January 1 to December 31, 2018, compared to 3,760 acre feet discharged into the San Luis Drain from the Drainage Area, all of which occurred between January and March and in November and December as a result of rainfall. The selenium load was below the selenium allocations all months in 2018. Selenium within the system has been routinely monitored and the results of this monitoring detailed in the BA.

Although thresholds for the giant gartersnakes have not been established, the potential for toxic exposure to selenium through the uptake of prey would exist within Mud Slough if it were occupied by giant gartersnakes. However, trapping efforts as recent as 2016 have failed to find giant gartersnakes in Mud Slough. Although the proposed project will introduce and convey stormwater elevated in selenium, they are at much reduced levels and possibly lower volumes than occurred historically, through the San Luis Drain and Mud Slough to the San Joaquin River. The conveyance would coincide with already increased flows in all three waterways resulting from heavy rainfall. The proposed project would prevent selenium-elevated water from seeping and spilling into South Grasslands wetland water supply channels as a result of flooding in the Drainage Area during heavy rain events.

Conservation Measures

As part of the proposed project, the Authority and their representatives will implement conservation measures intended to monitor the selenium concentrations that may occur during project implementation.

1. The existing Regional Water Quality Control Board's Water Quality Control Plan for the Sacramento River and San Joaquin River Basins Water Quality Objectives for selenium must be met (CVRWQCB 2016). For Mud Slough (North) and the San Joaquin River from the Mud Slough confluence to the Merced River, the performance goal is 15 µg/L selenium, monthly mean, and 20 µg/L selenium, maximum. This performance goal expires December 31, 2019 and reverts to a WQO of 5 µg/L, 4-day average.
 - a. For the San Joaquin River from the confluence with the Merced River to Vernalis, the objectives are 5 µg/L selenium, 4-day average, and 12 µg/L selenium, maximum.
 - b. For Salt Slough and for the water supply channels in the Grassland Watershed, the objectives are 2 µg/L selenium, monthly mean, and 20 µg/L selenium, maximum.
2. Drainage sumps will be turned off prior to and during storm events.
3. The San Luis Drain will continue to be operated and maintained to prevent drainage water from flowing south of Check 19 and to allow groundwater from south of Check 19 to spill into the San Luis Drain as necessary to prevent overtopping.
4. Rather than discharging storm-induced flows from the Drainage Area through the San Luis Drain and directly to Mud Slough, regulating basins would collect drainage during storm events to reduce peak flows and the associated discharge to the San Luis Drain. Water in the regulating basins would distribute the storm water to the SJRIP reuse area beginning in late February or to the Grassland Bypass Channel and San Luis Drain if there is insufficient reuse capacity. The basins would be emptied by late May to avoid exposure to wildlife.
5. Selenium already contained in sediments in the San Luis Drain is a source of concern because flows may suspend and transport sediments; selenium may migrate into the water column; and sediments may act as a sink, and selenium may concentrate into sediment. Under normal operations, flows will be slow enough to not cause sediment movement. Monitoring activities will detect any movements or selenium migration. In the event that selenium in sediments migrates into the water column, such selenium will be measured as

part of the monitoring program which will, among other things, measure selenium levels in Mud Slough downstream of the San Luis Drain (Site D). Sediments will be removed well before composite concentrations indicate hazardous material values.

6. Monitoring Program

The Authority and their representative(s) will implement an adaptive Monitoring Program, which will be a collaborative effort between existing monitoring programs (such as the Irrigated Lands Regulatory Program), the Grassland Bypass Project Monitoring Program, and new monitoring tasks to provide additional data. The intent is to leverage existing monitoring efforts and supplement them as necessary to obtain information relevant to potential effects of the Proposed Action. Data collected over the first two years of the monitoring effort will be evaluated against thresholds of concern to the extent those thresholds are available. Data collection for, and the reporting of, constituents that are consistently below those thresholds or are otherwise determined to be below levels of concern may be adaptively withdrawn from the Monitoring Program.

Monitoring Sites

Below are the names and locations of the seven planned monitoring sites where data will be collected specifically for the Monitoring Program associated with the Long-term Stormwater Management Plan Project. Data collected at additional sites that are part of ongoing Waste Discharge Order and the Irrigated Lands Regulatory Program through the Central Valley Regional Water Quality Control Board and Reclamations monitoring program for the Grassland Bypass Project will be incorporated into the Monitoring Program. A description of those sites follows:

Grassland Bypass Project Monitoring Sites

- Inlet to the San Luis Drain - Site A: This site measures the discharge from the Grassland Drainage Area (GDA) into the San Luis Drain and is continuously monitored for flow and specific conductivity.
- Outlet from the San Luis Drain into Mud Slough (North) – Site B: This site is located within the San Luis Drain, approximately 26 miles downstream from Site A and measure the discharge from the San Luis Drain into Mud Slough (North). There are two sites that represent Site B: Site B2, located at the terminus of the San Luis Drain, where continuous flow and specific conductivity are measured, and Site B3, located approximately two miles upstream of Site B2. Site B3 includes an auto-sampler that collects daily samples for analysis.
- Mud Slough (North) Downstream of the San Luis Drain – Site D: this site is located within Mud Slough (North) approximately 500 yards downstream of Site B2. A U.S. Geological Survey monitoring site at this location measures continuous flow and specific conductivity and is available through the California Data Exchange Center (CDEC) as site MSG. An auto-sampler at this site collects daily samples that are monitored for total selenium.
- San Joaquin River Downstream of Mud Slough (North) – Site R: This site is located on the San Joaquin River approximately 1.5 miles downstream of the Mud Slough confluence and will characterize the impacts of Mud Slough

discharges on the San Joaquin River.

*Irrigated Lands Regulatory Program – Westside San Joaquin River Watershed Coalition
Monitoring Sites*

- San Joaquin River at Lander Avenue. This site is located on the San Joaquin River approximately 10 miles upstream of the Mud Slough confluence. This site is visited monthly for water samples in compliance with the Irrigated Lands Regulatory Program covering a variety of pesticide, general chemistry, nutrients, and metal constituents and will be used to characterize the receiving waterbody conditions prior to the Mud Slough discharge. A USGS monitoring station at this site measures continuous flow, which is available on CDEC.
- Mud Slough Upstream of San Luis Drain. This site is located approximately 500 yards upstream of the San Luis Drain terminus. This site is visited monthly for water samples in compliance with the Irrigated Lands Regulatory Program covering a variety of pesticide, general chemistry, nutrients, and metal constituents and will be used to characterize the receiving waterbody conditions prior to the San Luis Drain discharge.

New monitoring site

- San Joaquin River at Freemont Ford – Site G. This site is located approximately 4 miles upstream of the confluence with Mud Slough. This site will be added to the monitoring program to characterize receiving waterbody selenium characteristics.

Monitoring Schedule

The monitoring schedule will be generally dependent on the type of constituent; however, some measurements (like flow) are monitored continuously, some sites have continuously acting auto-samplers for daily or weekly composite samples, and some sites are visited weekly for sample collection. Monitoring is planned to begin in March of 2020.

Constituents

A brief description of the constituents that will be monitored is provided here.

- Total Selenium. Water samples will be collected and tested for total selenium. Total selenium results will include the combined concentration of selenium in both the dissolved and particulate phases as an unfiltered sample.
- Dissolved Selenium. Water samples will be collected, laboratory filtered, and analyzed for the concentration of selenium in the dissolved phase.
- Selenium in sediment. Sediment samples will be collected from the streambed and analyzed for selenium concentration.
- Particulate Selenium. Particulate samples will be collected using the method described in the document entitled “Draft Translation of Selenium Tissue Criterion Elements to Site Specific Water Column Criterion Elements for California Version 1, August 8, 2018”.
- Metals & Hardness. Metals analysis will include the dissolved (laboratory filtered) analysis of iron, lead, mercury, copper, and zinc. Hardness (as

calcium carbonate) will be included in all dissolved metals analysis for the interpretation of potential aquatic risk.

- Pesticides. Pesticides are monitored through the Irrigated Lands Regulatory Program. Specific pesticide constituents are selected through a Pesticide Evaluation Protocol developed by the Regional Water Quality Control Board which utilizes past pesticide use data and recent detections to determine which pesticides will be analyzed in any given month and at any given location.
- Total Suspended Solids and Turbidity. Turbidity will be analyzed using a field turbidimeter. Total suspended solids samples will be collected in the field and analyzed in a laboratory.
- Oil/Grease/Hydrocarbons. Oil, grease, lubricants, and other petroleum hydrocarbons/polycyclic aromatic hydrocarbons will be sampled for at the first storm flush of the season to determine if mechanical fluids are contaminating discharges.
- Nutrients. Nutrient samples may include ammonia (as N), nitrate (as N), total phosphorous, or soluble ortho-phosphorus.
- Bacteria. Bacteria samples will be collected and measured for *E. coli*.

Monitoring Reporting

An annual report will be due to the Service and the National Marine Fisheries Service on October 1 of each year of the monitoring program. The report will describe the methods used to monitor each constituent and tables of the results.

Conclusion

The Service concurs with your determination that the Project may affect, but is not likely to adversely affect the giant gartersnake. Due to the low likelihood of occurrence, the improved water quality with the cessation of drainage flows, and further improvement in water quality that is expected to result from the proposed project, selenium exposure expected as a result of the proposed project giant gartersnakes are not likely to be adversely affected by the implementation of the proposed project. Our concurrence with NLAA for this Project is based on the results of ongoing survey results showing that giant gartersnakes are rare in the project area, the results of selenium monitoring showing levels of contamination below established thresholds, and Reclamation's implementation of conservation measures to ongoing monitoring. This concludes the Service's review of the Project. No further coordination with the Service under the Act is necessary at this time. Please note, however, this letter does not authorize take of listed species. As provided in 50 CFR §402.14, initiation of formal consultation is required where there is discretionary federal involvement or control over the action (or is authorized by law) and if: 1) new information reveals the effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this review; 2) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this review; or 3) a new species is listed or critical habitat designated that may be affected by the action.

Dave Hyatt

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If you have questions regarding this action, please contact Tim Ludwick, Fish and Wildlife Biologist, (timothy_ludwick@fws.gov) or (916) 414-6551 or Patricia Cole, Chief, San Joaquin Division (patricia_cole@fws.gov) at the letterhead address.

cc:

Craig Bailey, California Department of Fish and Wildlife, California

Appendix C: National Marine Fisheries Service Concurrence Memorandum



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
650 Capitol Mall, Suite 5-100
Sacramento, California 95814-4700

December 27, 2019

Refer to NMFS No: WCRO-2019-03612

Rain Emerson
Chief, Environmental Compliance Branch
Bureau of Reclamation, Mid-Pacific Region
1243 N Street
Fresno, California 93721-1813

Re: Endangered Species Act Section 7(a)(2) Concurrence Letter and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response and Fish and Wildlife Coordination Act Recommendations for the Long-term (i.e., 10-year) Stormwater Management Plan for the Grasslands Drainage Area (19-029)

Dear Ms. Emerson:

On December 9, 2019, NOAA's National Marine Fisheries Service (NMFS) received your request for a written concurrence that the Bureau of Reclamation (Reclamation) and the San Luis & Delta-Mendota Water Authority's (Authority) Long-term (i.e., 10-year) Stormwater Management Plan for the Grasslands Drainage Area is not likely to adversely affect (NLAA) species listed as threatened or endangered or critical habitats designated under the Endangered Species Act (ESA). This response to your request was prepared by NMFS pursuant to section 7(a)(2) of the ESA, implementing regulations at 50 CFR 402, and agency template for preparation of letters of concurrence.

NMFS also reviewed the proposed action for potential effects on Pacific Coast Salmon essential fish habitat (EFH) designated under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), including conservation measures and determinations you made regarding the potential effects of the action. This review was pursuant to section 305(b) of the MSA, implementing regulations at 50 CFR 600.920, and agency template for use of the ESA consultation process to complete EFH consultation. In this case, NMFS concluded the action would not adversely affect EFH, based on the ESA effects analyses. Thus, consultation under the MSA is not required for this action.

Because the proposed action will modify a stream or other body of water, NMFS also provides recommendations and comments for the purpose of conserving fish and wildlife resources under the Fish and Wildlife Coordination Act (16 U.S.C. 662(a)).

This letter underwent pre-dissemination review using standards for utility, integrity, and objectivity in compliance with applicable guidelines issued under the Data Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001, Public Law 106-554). The document will be available within two weeks at NMFS' Environmental Consultation Organizer [<https://www.fisheries.noaa.gov/resource/tool-app/environmental-consultation-organizer-eco>]. A complete record of this consultation is on file at the California Central Valley Office of NMFS in Sacramento, CA.



Consultation History

- August 20, 2019: NMFS receives consultation request from Reclamation.
- August 29, 2019: NMFS requests additional information from Reclamation, via email.
- September 4, 2019: NMFS receives response from Reclamation with additional information.
- September 17, 2019: NMFS staff speak with Reclamation about the proposed project, and NMFS gives Reclamation a verbal "nonconcurrence" of NLAA determinations.
- September 27, 2019: Reclamation, the Authority, and NMFS meet to discuss the project, and NMFS asks Reclamation and the Authority to look at the model presented in Presser and Luoma (2010) to help determine tissue selenium thresholds for the listed salmonids and the southern DPS of green sturgeon.
- October 28, 2019: NMFS receives Presser and Luoma (2010) modeling results from Reclamation (Appendix A).
- November 7, 2019: Reclamation and NMFS discuss the modeling results, and agree that a 10-year action, with a 5-year project review included in the timeline and a bolstered and expanded stormwater monitoring program to allow for informed adaptive management, would be appropriate.
- November 18, 2019: NMFS responds to a request from Reclamation about pollutant thresholds and suggests that the EPA thresholds should be viewed as a maximum water quality thresholds area.
- November 20, 2019: Reclamation sends a draft stormwater quality monitoring plan to NMFS for their review and comment.
- November 27, 2019: NMFS responds to Reclamation's request for comment on the draft stormwater quality monitoring plan.
- December 2, 2019: Conference call between NMFS and Reclamation to clarify the proposed stormwater monitoring approach and constituents to be measured.
- December 9, 2019: Reclamation sends a revised Biological Evaluation (BE) to NMFS.
- December 11, 2019: NMFS requests more information from Reclamation on items in the revised BE.
- December 12, 2019: Reclamation responds with requested information and NMFS determines the BE is complete and initiates consultation.
- December 19, 2019: Conference call between NMFS and Reclamation to clarify selenium monitoring and thresholds.

Proposed Action and Action Area

The proposed action is Reclamation's issuance of a Conditional Use Permit allowing the Authority to continue using the San Luis Drain for conveyance of up to 150 cfs of stormwater drainage to the San Joaquin River for a period of 10 years, starting January 1, 2020. The San Luis Drain is a roughly 85 mile concrete lined canal previously used to move drainage water off and out of the Grasslands Drainage Area (Figure 1).

No federal facilities would be modified (i.e., the San Luis Drain structure) and new groundbreaking activities are not part of the proposed action. Stormwater from the Grasslands drainage area would be routed through the Grasslands Bypass Project into the San Luis Drain, which would then convey the stormwater to Mud Slough and discharged. The discharged stormwater would then flow downstream into the San Joaquin River (Figure 1). The discharged stormwater would not be treated once it enters the San Luis Drain.

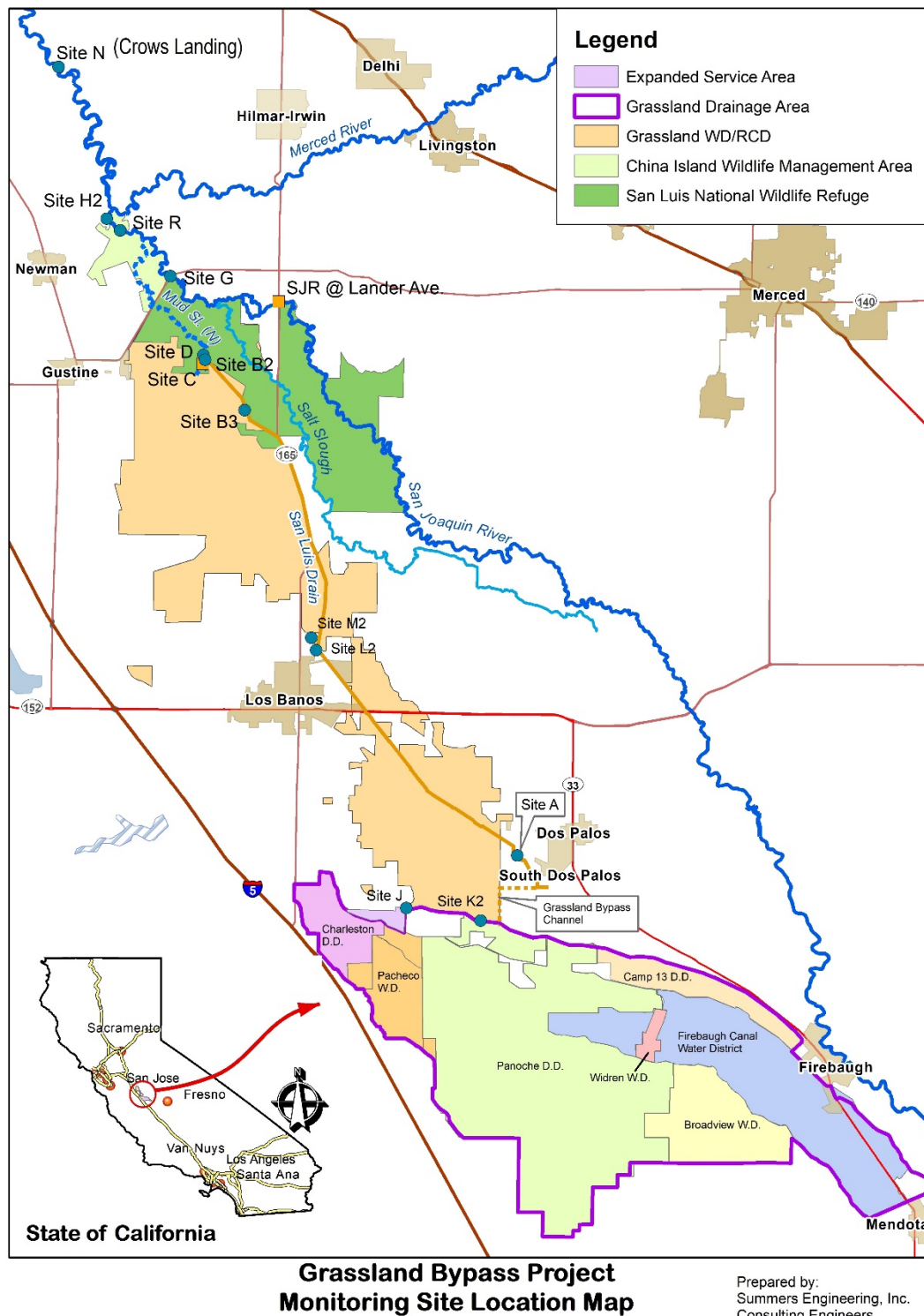


Figure 1. Map of the project area and proposed monitoring site locations (Reclamation BE).

Conservation Measures

The following conservation measures are included as part of the project description and would be implemented by the Authority and their representative(s) to minimize and avoid potential environmental consequences associated with the proposed action. The effects determination for the proposed action assumes that these measures would be entirely implemented on the timelines stated and that the water quality performance goals for stormwater discharged established in this consultation would not be exceeded.

- Drainage sumps in the Grasslands Drainage Area would be turned off prior to and during storm events to prevent sump water (likely laden with selenium) from entering the stormwater flow.
- The San Luis Drain would continue to be operated and maintained to prevent drainage water from flowing south of Check 19 and to allow groundwater from south of Check 19 to spill into the San Luis Drain as necessary to prevent overtopping and spilling stormwater out onto other properties uncontrollably.
- Rather than discharging storm-induced flows from the Drainage area through the San Luis Drain and directly to Mud Slough, regulating basins would collect a percentage of the stormwater during storm events to reduce peak flows and the associated discharge before it is conveyed into the San Luis Drain, removing the stormwater portion with the highest concentration of contaminants and sequestering them onsite, to the extent possible.
 - There are two sets of regulating basins included in the proposed action. The first is already existing and the second would be constructed by 2023. Water in the regulating basins would distribute the stormwater to the San Joaquin River Improvement Project reuse area beginning annually in late February or to the Grassland Bypass Channel and San Luis Drain if there is insufficient reuse capacity. The regulating basins would be emptied of water annually by late May to avoid exposure to wildlife.
- Sediment accumulated in the San Luis Drain from years of use as a drainage water conveyance is a source of concern for the proposed action because these sediments accumulated from conveying drainage water, which had higher concentrations of selenium compared to the selenium concentrations of stormwater. In addition, since sediments tend to act as a sink and concentrate containments like selenium, the risk of exceeding selenium thresholds due to large stormwater flows re-suspending and transporting these sediments into receiving waters is significant. The proposed action includes efforts to scrape the San Luis Drain clean of accumulated sediment, however this activity would take several years to complete in its entirety. Under normal operations (i.e., <150 cfs), flows should be slow enough to not cause significant sediment resuspension and movement, however larger stormwater flows have been observed in the San Luis Drain. Therefore, the project would rely on stormwater and receiving water monitoring activities to detect signals that stormwater flows are causing sediment movement or selenium migration. In the event that selenium in accumulated sediments

migrates into the water column, such selenium would be measured as part of the monitoring program which would, among other things, measure selenium levels in Mud Slough downstream of the San Luis Drain (Site D). Accumulated sediments would be removed from the drain in the dry season (i.e., summer through early fall), then dried on the San Luis Drain right-of-way, and may be used to fill in problem areas of the Kesterson Reservoir.

Five-year Project Review

In 2024, Reclamation, the Authority and their representatives, and NMFS would convene a meeting to discuss the project, review monitoring data, and provide updates on any relevant new information. A decision on the project status on whether the proposed action is performing as analyzed in this consultation or if a formal ESA/MSA consultation is instead required, conveyed by a letter from NMFS to Reclamation, would be issued by 2025.

Water Quality Thresholds

- *A Methodology for Ecosystem-Scale Modeling of Selenium* (Presser and Luoma 2010) was reviewed and reasonable yet protective scenarios were developed given the absence of current data for the action area to estimate the upper limit of dissolved selenium discharged that would still be protective listed fish (i.e., California Central Valley (CCV) steelhead, and the southern distinct population (sDPS) of green sturgeon) feeding in the action area by estimating the resulting whole body fish in-tissue selenium concentrations. Effects to these species were based upon the modeled dissolved selenium limits in the San Joaquin River, which ranged from 3.89 to 6.07 µg/L for Chinook salmon, 4.37 to 5.23 µg/L for CCV steelhead, and 2.05 µg/L for sDPS green sturgeon. Green sturgeon have not been documented in the action area, and while San Joaquin River restoration continues, green sturgeon are not anticipated to occur within the action area during the 10-year duration of the proposed action. Since 2015, selenium concentrations at Site R (Figure 1) have been below the range of 3.89 to 6.07 µg/L for Chinook salmon and the range of 4.37 to 5.23 µg/L for CCV steelhead. Selenium concentrations at Site R are anticipated to be compatible with these ranges for Chinook salmon and CCV steelhead during the 10-year duration of the Project.

State Water Resources Control Board Water Quality Measures

- For Mud Slough (North) and the San Joaquin River from the Mud Slough confluence to the Merced River, the performance goal is 5 µg/L total selenium, 4-day average. In this case, total selenium is the combined amount of selenium from the amount of dissolved, particulate, and sediment bound selenium (per. Conference call on December 19, 2019).
- For the San Joaquin River from the confluence with the Merced River to Vernalis, the objectives are 5 µg/L total selenium, 4-day average, and 12 µg/L selenium daily maximum. In this case, total selenium is the combined amount of selenium from the

amount of dissolved, particulate, and sediment bound selenium (per. Conference call on December 19, 2019).

- The maximum refers to an instantaneous maximum. No daily mean can exceed the maximum and the 4-day average cannot exceed 5 µg/L. For example daily averages could be 12, 2, 3, and 2 would yield an acceptable 4-day average of 4.75 µg/L and not exceed the instantaneous maximum; but daily average of 10, 10, 3, and 2 would yield an unacceptable 4-day average of 6.25 µg/L and also not exceed the instantaneous maximum.
- For Salt Slough and for the water supply channels in the Grassland Watershed, the objectives are 2 µg/L total selenium, monthly mean, and 20 µg/L selenium, maximum. In this case, total selenium is the combined amount of selenium from the amount of dissolved, particulate, and sediment bound selenium (per. Conference call on December 19, 2019).

Monitoring Program

The Authority and their representative(s) would implement an adaptive Monitoring Program, which would be a collaborative effort between existing monitoring programs (such as the Irrigated Lands Regulatory Program and the Grassland Bypass Project Monitoring Program) and new monitoring tasks to provide additional data on the proposed action. The intent is to leverage existing monitoring efforts and supplement them as necessary to obtain information relevant to potential effects of the proposed action over the long-term. Data collected over the first two years, including at least two years of first flush data, of the monitoring effort would be evaluated against thresholds of concern to the extent those thresholds are available. Data collection for constituents that are consistently below those thresholds or are otherwise determined to be below levels of concern may be adaptively withdrawn from the Monitoring Program after a thorough review and concurrence from NMFS, based least two years of monitoring data (Figure 2).

An annual report of the monitoring data would be delivered to NMFS by October 1st every year to provide updates of the water quality effects of the action before the scheduled review.

Constituent	Numeric Threshold	Source
Selenium (Total)	5 ppb 4-day Average	BPA
Selenium (dissolved)	Not Determined	
Selenium in sediment	Not Determined	
Selenium in particulate	Not Determined	
Iron	1000 µg/L	EPA
Lead	Variable - hardness dependant	BPA
Mercury	0.77 µg/L chronic, dissolved Hg	EPA
Copper	Variable - hardness dependant	BPA
Zinc	Variable - hardness dependant	BPA
Pesticides	See Table 3	BPA
TSS	Not Determined	
Turbidity	<10% increase from background	BPA
Oil/Grease/hydrocarbons	Not Determined	
Total Phosphorous	Not Determined	
Nitrate - N	10 mg/L	BPA
Ammonia - N	Variable - Temp and pH dependant	EPA

BPA - Sacramento/San Joaquin Basin Plan Amendment

EPA - National Recommended Water Quality Criteria - Aquatic Life Criteria

Figure 2. Proposed water quality thresholds from Appendix B of the Biological Evaluation.

Monitoring Sites

Figures 1 and 3 depict the names and locations of the seven monitoring sites where data would be collected specifically for the monitoring program associated with the Long-term Stormwater Management Plan Project. Data collected at additional sites that are part of ongoing Waste Discharge Order and the Irrigated Lands Regulatory Program through the Central Valley Regional Water Quality Control Board and Reclamation's monitoring program for the Grassland Bypass Project would also be incorporated into the monitoring program and annual report, as available. A description of those sites follows:

Grassland Bypass Project Monitoring Sites

- Inlet to the San Luis Drain - Site A (Figure 1): This site measures the discharge from the Grassland Drainage Area (GDA) into the San Luis Drain and is continuously monitored for flow and specific conductivity.
- Outlet from the San Luis Drain into Mud Slough (North) – Site B (Figure 1): This site is located within the San Luis Drain, approximately 26 miles downstream from Site A and measure the discharge from the San Luis Drain into Mud Slough (North).
 - There are two sites that represent Site B: Site B2, located at the terminus of the San Luis Drain, where continuous flow and specific conductivity are measured, and Site B3, located approximately two miles upstream of Site B2. Site B3 includes an auto-sampler that collects daily samples of flow and total selenium.

- Mud Slough (North) Downstream of the San Luis Drain – Site D (Figure 1): This site is located within Mud Slough (North) approximately 500 yards downstream of Site B2. A USGS monitoring site at this location measures continuous flow and specific conductivity and is available through the California Data Exchange Center (CDEC) as site MSG. An auto-sampler at this site collects daily samples that are monitored for total selenium (total selenium consists of dissolved, particulate, and sedimentary selenium, as was stated in the December 19, 2019 conference call).
- San Joaquin River Downstream of Mud Slough (North) – Site R (Figure 1): This site is located on the San Joaquin River approximately 1.5 miles downstream of the Mud Slough confluence and would characterize the impacts of Mud Slough discharges on the San Joaquin River.

Irrigated Lands Regulatory Program – Westside San Joaquin River Watershed Coalition Monitoring Sites

- San Joaquin River at Lander Avenue (Figure 1): This site is located on the San Joaquin River approximately 10 miles upstream of the Mud Slough confluence. This site is visited monthly for water samples in compliance with the Irrigated Lands Regulatory Program covering a variety of pesticide, general chemistry, nutrients, and metal constituents and would be used to characterize the receiving waterbody conditions prior to the Mud Slough discharge. A USGS monitoring station at this site measures continuous flow, which is available on CDEC.
- Mud Slough Upstream of San Luis Drain: This site is located approximately 500 yards upstream of the San Luis Drain terminus. This site is visited monthly for water samples in compliance with the Irrigated Lands Regulatory Program covering a variety of pesticide, general chemistry, nutrients, and metal constituents and would be used to characterize the receiving waterbody conditions prior to the San Luis Drain discharge.

New monitoring site

- San Joaquin River at Freemont Ford – Site G (Figure 1): This site is located approximately 4 miles upstream of the confluence with Mud Slough. This site would be added to the monitoring program to characterize receiving waterbody selenium characteristics before mixing with stormwater from the proposed action.

Monitoring Schedule

The monitoring schedule would be generally dependent on the type of constituent; however, some measurements (like flow) are monitored continuously, some sites have continuously acting auto-samplers that take daily or weekly composite samples, and some sites are visited weekly by staff for sample collection. Monitoring is planned to begin in March of 2020; Figure 3 summarizes the monitoring sites, constituents, and monitoring frequency.

Constituents Monitored

The location and frequency of constituent monitoring is summarized in Figure 3. A brief description of the constituents is provided here.

- **Total Selenium:** water samples will be collected and tested for total selenium. Total selenium results would include the combined concentration of selenium dissolved in the water column, selenium conveyed in particulate matter, and selenium contained in the sediments conveyed through the San Luis Drain. Dissolved and particulate selenium would be captured in unfiltered water samples during stormwater discharge events and/or as scheduled, while selenium in sediment would be sampled differently.
 - **Dissolved Selenium:** water samples would be collected, laboratory filtered, and analyzed for the concentration of selenium in the dissolved phase.
 - **Particulate Selenium:** particulate samples would be collected and processed using the methods described in the document entitled “Draft Translation of Selenium Tissue Criterion Elements to Site Specific Water Column Criterion Elements for California Version 1, August 8, 2018”.
 - **Selenium in sediment:** sediment samples would be collected from the streambed and analyzed for selenium concentration before and after the stormwater discharge season.
- **Metals & Hardness:** metals analysis would include the dissolved (laboratory filtered) analysis of iron, lead, mercury, copper, and zinc. Hardness (as calcium carbonate) would be included in all dissolved metals analysis for the interpretation of potential aquatic risk.
- **Pesticides:** pesticides are monitored through the Irrigated Lands Regulatory Program. Specific pesticide constituents are selected through a Pesticide Evaluation Protocol developed by the Regional Water Quality Control Board, which utilizes past pesticide use data and recent detections to determine which pesticides would be analyzed in any given month and at any given location.
- **Total Suspended Solids and Turbidity:** turbidity would be analyzed using a field turbidimeter. Total suspended solids samples would be collected in the field and analyzed in a laboratory.
- **Oil/Grease/Hydrocarbons:** oil, grease, lubricants, and other petroleum hydrocarbons/polycyclic aromatic hydrocarbons would be sampled for at the first storm flush of the season to determine if mechanical fluids are contaminating discharges.
- **Nutrients:** nutrient samples may include ammonia (as N), nitrate (as N), total phosphorous or soluble ortho-phosphorus.
- **Bacteria:** bacteria samples would be collected and measured for E. coli.

Monitoring Reporting

An annual report would be due to NMFS on October 1 of each year of the monitoring program. The report would describe the methods used to monitor each constituent and tables of the results, as well as the raw data and laboratory analyses.

Site	Flow	Selenium				Metals						Other							Agency
		Total Se	Dissolved Se	Sediment Se	Particulate Se	Hardness	Iron (Dissolved)	Lead (Dissolved)	Mercury (Dissolved)	Copper (Dissolved)	Zinc (Dissolved)	Pesticides (Table 4)	TSS	Turbidity	Oil/Grease/hydrocarbons	Total Phosphorous	Nitrate - N	Ammonia - N	
Mud Sl d/s SLD (Site D)	d	d	m	A	B	m	m	m	m	m	m	m*	-	w	-	m	m	m	GBP/USBR
SJR @ Site R	d*	w	m	A	B	m	m	m	m	m	m	m*	-	w	-	m	m	m	GBP/USBR
SJR @ Site G (SJR at Freemont Ford)	d	w	m*	-	B	-	-	-	-	-	-	-	-	-	-	-	-	-	GBP/USBR
SLD at Inlet Site A	d	w	m*	A	-	-	-	-	-	-	-	-	-	-	A*	m*	m*	m*	GBP/USBR
SLD at Outlet Site B3	d	d	m*	A	-	m*	m*	m*	m*	m*	m*	-	-	-	-	m*	m	m	GBP/USBR
SJR at Lander Ave	d	m	-	-	-	m	-	m	m	m	m	m	m	m	-	-	m	m	WSJRW
Mud Sl u/s of SLD (Site C)	d	m	-	-	-	m	-	m	m	m	m	m	m	m	-	-	m	m	WSJRW

d = daily sample

w = weekly sample

m = monthly sample

m* = monthly sample when Site A is flowing.

A = annual sample

A* = annual at first storm event

- = Not included in monitoring program

B = biannual, spring and fall samples

d* = CDEC flow station at SJR & Hills Ferry road

GBP/USBR = Monitored by Grassland Basin Drainers & USBR

WSJRW = Monitored by Westside SJR Watershed Coalition

Figure 3. The proposed monitoring schedule (Reclamation BE).

We considered whether or not the proposed action would cause any other activities and determined that it would not.

Action Area

The Drainage Area is 97,400 acres and extends from south of Los Banos to the city of Mendota (Figure 1). The Drainage Area is mostly irrigated farmland with a few small communities. Within the action area, water bodies that would convey stormwater away from the Drainage area include the four-mile Grassland Bypass Channel, 28 miles of the San Luis Drain from Russell Avenue to its northern terminus at Mud Slough, six miles of Mud Slough upstream of its confluence with the San Joaquin River, and 14 miles of the San Joaquin River from Mud Slough to Crows Landing.

One of the ultimate goals of the Grasslands Bypass Project is to meet the 4-day average selenium water quality objectives of 5 µg/L in Mud Slough (North) at Site D (roughly 20 miles downstream of northern end of the action area; Figure 1), by December 31, 2019, however the threshold of the 5 µg/L 4-day average selenium water quality objectives was exceeded six times in 2014, four times in 2017 and twice in 2018, respectively. To this end, proposed non-federal

projects (as included in the Conservation Measures), are expected to further reduce exceedances of the selenium water quality objectives in Mud Slough to no more than once in 3.5 years to achieve the 4-day average selenium goal of 5 µg/L going forward.

Crows Landing was chosen as the most downstream extent of the action area in the San Joaquin River; because Reclamation's water sampling at this site (daily sampling 2015 and 2016, weekly sampling 2016 to present) has shown selenium levels to be below 2 µg/L in most instances. Two µg/L is a significant water quality threshold because multiple studies have shown that aquatic habitats with water concentrations above 2 µg/L total selenium often see measurable, negative biological outcomes in aquatic predatory species, including Chinook salmon and CCV steelhead. Aquatic predators that feed on selenium-contaminated prey for a period of time are expected to experience reduced growth rates, kidney damage, reproductive potential suppression, developmental deformities and mortalities in their offspring, and increased rates of mortalities of adults through the biotic transfer and bioaccumulation of selenium in their body tissues (Hamilton *et al.* 1990, Lemly 1996b, a, Hamilton 2004, Presser and Luoma 2013, De Riu *et al.* 2014). Since the cessation of using the San Luis Drain to convey agricultural drainwater from the Grasslands Bypass Project to discharge into Mud Slough in 2014, selenium levels at Crows Landing have exceeded 2 µg/L for five days total, on March 26-28, 2015, and May 11-12, 2016.

Action Agency's Effects Determination

Reclamation assumed that juvenile salmon migrate through the area of concern between January and May and that juvenile salmonids would likely be in the area of concern for only a few days, and unlikely to remain in the area of concern longer than about two months. Reclamation analyzed the 1 to 3 month prior time-averaged selenium water concentrations in the San Joaquin River for the Jan through May periods at Site H near the confluence of the Merced and San Joaquin rivers (Figure 1). The concentrations in samples during that period (each sample represented an updated 3-month average of the sampled concentrations) were all below the lowest reported in water threshold (3.3 µg/L) for selenium impacts to feeding juvenile Chinook salmon. Due to the assumed low probability of extended exposure Reclamation concluded juvenile Chinook salmon and CCV steelhead migrating through this reach would not be adversely affected.

Reclamation also determined that selenium loads, water selenium concentrations, and selenium levels in biota have all decreased since the last Conditional Use Permit and are expected to remain at safe levels for CCV steelhead and its critical habitat in the San Joaquin River. Reclamation states that the proposed action is not likely to adversely affect the designated critical habitat for CCV steelhead because it would not decrease the functionality of the designated critical habitat for CCV steelhead.

Currently, sDPS green sturgeon are not known to occur in the action area. If sDPS green sturgeon were to occur in the action area, they may be affected by increased levels of selenium available in their preferred prey, benthic clams and invertebrates. Reclamation expects selenium levels discharged to remain low enough so as to be not likely to adversely affect the species in the areas they occur, outside and downstream of the action area of the proposed action (Appendix A).

ENDANGERED SPECIES ACT

Effects of the Action

Under the ESA, “effects of the action” are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action (50 CFR 402.02). In our analysis, which describes the effects of the proposed action, we considered 50 CFR 402.17(a) and (b). When evaluating whether the proposed action is not likely to adversely affect listed species or critical habitat, NMFS considers whether all the effects are expected to be completely beneficial, insignificant, or discountable. Completely beneficial effects are contemporaneous positive effects without any adverse effects to the species or critical habitat. Insignificant effects relate to the size of the impact and should never reach the scale where incidental take occurs. Discountable effects are those extremely unlikely to occur under normal operations and circumstances.

Table 1. Species listed under the Endangered Species Act that may occur within the action area.

Species	Distinct Population Segment (DPS)	Original Final Federal Register (FR) Listing	Current Final Listing Status	Critical Habitat Designated
Steelhead (<i>O. mykiss</i>)	California Central Valley DPS	3/19/1998 63 FR 13347 Threatened	1/5/2006 71 FR 834 Threatened	Within action area, San Joaquin River from confluence with Merced River to Crows Landing
Chinook salmon (<i>O. tshawytscha</i>)	Central Valley spring-run DPS (*non-essential experimental population)	9/16/1999 64 FR 50394 Threatened	6/28/2005 70 FR 37160 Threatened	Not in action area
Green sturgeon (<i>A. metshawytscha</i>)	Southern DPS	4/7/2006 71 FR 17386 Threatened	4/7/2006 71 FR 17386 Threatened	Not in action area

*78 FR 79622, December 31, 2013

The potential effects of the proposed action include impacts to CCV steelhead, Central Valley (CV) spring-run Chinook salmon, and sDPS green sturgeon, and designated critical habitat for CCV steelhead. These impacts may include physiological stress to the extent that the normal behavior patterns (e.g., feeding, sheltering and migration) of individuals may be disrupted upon contact with discharged stormwater. Indirect, project-related effects may be in the form of degraded water quality due to discharged stormwater, in particular by contributing to the amount of selenium taken up by individuals of these species through prey items found in the action area and increasing over all selenium loads in the entire freshwater ecosystem upon which they depend for reproduction, survival, and growth. Increased selenium concentration in prey items consumed by adults could cause spinal deformities in their offspring that may lead to decreased

swimming performance and increased predation and illicit behavioral responses that would decrease their offspring's survival rates. Juvenile fishes that been exposed to toxic amounts of selenium in their prey have also exhibited similar signs of spinal deformities and potential negative behavioral responses (Johnson *et al.* 2018). If in-tissue selenium concentrations were high enough and persisted long enough into adult stages, reproductive success would be expected to be decreased and developmental deformity rates in offspring would be expected to significantly increase (US Department of the Interior 1998, Hamilton 2004).

Besides selenium, stormwater generally contains an unknown mix of pollutants that are toxic to aquatic life, including the listed species discussed here, and their prey bases. The typical pollutants of most concern are pesticides, heavy metals, fertilizers, petroleum-based hydrocarbons, and pathogens. Poor water quality caused by untreated stormwater often has sublethal and cumulative adverse effects to the fish populations inhabiting the receiving waterbodies, which often go undetected though are equally as damaging as directly killing individual fish (McIntyre *et al.* 2015, Closs *et al.* 2016, Feist *et al.* 2017). Currently, the stormwater from the Grasslands Drainage area is not treated before discharge, however given the extensive stormwater monitoring program proposed for the action, pollutants of concern will be detected and reported. If there is concern that pollutants may be resulting in take of listed species through sublethal and cumulative adverse effects, NMFS will reinstate this consultation and may request Grasslands users or Reclamation include stormwater treatment measures into the proposed action.

CV spring-run Chinook Salmon

The action area is part of the migration path for both juvenile and adult CV spring-run Chinook salmon. Since the spring of 2014, the San Joaquin River Restoration Program has been releasing juvenile CV spring-run Chinook salmon into the action area (NMFS 2019). These CV spring-run Chinook salmon are labeled as a non-essential experimental population (78 FR 79622, December 31, 2013) under section 10(j) of the ESA and therefore, Section 7(a)(2) of the ESA does not apply within the Restoration Area which extends from Friant Dam in Friant, CA, downstream to the San Joaquin River's confluence with the Merced River. Outside of the Restoration Area, protection under ESA Section 7(a)(2) applies to all CV spring-run Chinook salmon. In spring of 2019, adult CV spring-run Chinook salmon were documented migrating through the action area for the first time in over 65 years and over 200 redds were naturally created upstream in the San Joaquin River (Zak Sutphin *et al.* 2019). As such, juvenile spring-run Chinook salmon are expected to use the action area as a migration corridor to reach the Delta and are expected to forage during their outmigration.

Adult salmonids largely do not feed during their migration upstream and therefore would not be at risk to selenium toxicity through the biotic food-web pathway. Since the maximum values of selenium in the stormwater discharged from the San Luis Drain are expected to be no higher than 20 µg/L at any point, adult salmonids are not expected to be adversely affected by selenium as they use and pass through the action area. However, non-lethal selenium accumulated over the life time of a fish will affect the reproductive potential of the affected adult (US Department of the Interior 1998).

Juvenile life stages of salmonids, on the other hand, are likely to feed as they travel through the action area and doing so is a necessary part of their life history. Various studies have observed mortalities of juvenile salmonids (Chinook and *O. mykiss*) when their whole body tissue dry weight exceeds 6 µg/g selenium (Hamilton et al 1990); reduced growth rates and internal organ damage when their whole body tissue dry weight exceeds 4 µg/g selenium (Hilton and Hodson 1983). Below 4 µg/g selenium in tissue dry weight, significant adverse effects could not be clearly isolated as due to selenium toxicity (Hamilton 2004); selenium is an essential nutrient necessary to the growth and development of animals and fish at trace levels (i.e., less than 2 µg/g selenium dry weight (Lemly 1996a, 1996b)). Therefore, as long as juvenile salmonids that use the action area leave with total body selenium loads of no more than 4 µg/g selenium dry weight, short-term or long-term adverse effects from the proposed action are not expected.

Additionally, the flashy nature of the stormwater occurrence in this system makes modeling the selenium input to the aquatic ecosystem, and down-the-line effects to juvenile salmonids feeding in the area, challenging. DeForest *et al.* (2016) modeled the expected selenium contributions of short-term pulse flows (i.e., stormwater runoff) at 1- and 4-day durations, which is highly applicable to the proposed area. Their findings varied based on the ecosystem model selected (periphyton- vs. phytoplankton-based, representing flowing and ponded systems, respectively), durations of pulse flows, and selenium type (selenite vs. selenate), as selenium type has a great influence over its toxicity to aquatic life. One of their findings showed that multiple sequential pulse flows that were short (1-day) were just as likely to result in exceeding fish tissue criteria compared to a single but longer duration event (4-day), especially if the short pulse flows are repeated successively. This is because fish elimination rates of selenium are much slower than their selenium uptake rates. In this model run, 1-day pulses of selenium-laden stormwater occurred once every 30 days for 4 months were sufficient to cause the whole body fish tissue estimation to exceed 8 µg/g (twice the level considered here to have ‘no adverse effects’ to listed species). While these model approximations are of concern to resident fish, these results cannot be directly applied to juvenile and yearling salmonids actively moving through the action area.

Based on preliminary juvenile Chinook salmon migration data on juvenile migration timing through the San Joaquin River to reach the Delta (NMFS 2019), the longest a juvenile CV spring-run Chinook salmon took to exit the system was 90 days, but the average was roughly 45 days. This means that juvenile CV spring-run Chinook should transit the action area fairly quickly. Therefore, a juvenile salmonid would only be expected to experience at most the effects of two pulse flow periods from the proposed action. Based on approximations in the DeForest *et al.* 2016 model runs, this should not raise fish in-tissue selenium values past adverse effect thresholds. Elimination rates in periphyton and phytoplankton are much faster than fish elimination rates, so if stormwater is discharged infrequently with lengthy non-discharge periods in between (as is expected based on past data and the rainfall patterns), integration of selenium into the prey base is reduced. Subsequently, the juvenile CV spring-run Chinook salmon in-tissue selenium values rising to toxicity levels through adverse prey base effects are probably significantly reduced due to these factors. These assumptions can be verified over time as the proposed stormwater and receiving waters monitoring protocols are implemented and the data provided by Reclamation is analyzed in the annual reports.

Regarding dilution of stormwater selenium input, juvenile and yearling salmonids out-migrate from the San Joaquin River Basin January through June in years when winter flows are normal

or high. “Normal” winter flows in the San Joaquin River during this time are usually large because of rainfall and snowmelt patterns typical for the basin that extend over the rainy season and into the spring and summer, and are expected to be sufficiently large that selenium in the stormwater should be relatively dilute. Empirical data on the selenium load in the San Joaquin River before contributions from the San Luis Drain are not currently available, but natural background water quality levels are assumed less than 1 ppb selenium based on available data (Personal Communication with Joe Dillion from NMFS, Presser & Luoma 2013). However, in drier years receiving water flow is inherently less and may not dilute stormwater to the same extent. The onset of multiple consecutive dry years may additionally concentrate selenium in the Grasslands Drainage Area, causing stormwater to convey higher concentrations of selenium into the San Joaquin River during the first stormwater event after a dry period.

Additionally, Reclamation and the Authority have committed to adding sampling Site G (Figure 1) as a water quality control, which would allow for the ‘pre-project’ selenium load in the San Joaquin River to be determined and allow the selenium contribution from the San Luis Drain to be calculated. This will also ensure that stormwater from the proposed action will not raise San Joaquin River selenium levels above a harmful threshold, if selenium is already present in San Joaquin River water before it receives San Luis Drain stormwater contributions (a negative cumulative effect).

Furthermore, Reclamation used the model presented in Presser and Luoma (2010) to estimate potential whole body selenium concentrations from in-water selenium concentrations, using a series of assumptions that are explained in a memorandum dated October 28, 2019, from H.T. Harvey & Associates (Appendix A). The water column selenium values of 3.89 to 6.07 $\mu\text{g/L}$ was the range calculated at which CV spring-run Chinook salmon juveniles would not accumulate more than 4 $\mu\text{g/g}$ selenium whole body tissue, dry weight (i.e., those water column values would not lead to adverse effects to CV spring-run Chinook salmon juveniles feeding in the action area). At or below these dissolved selenium values, the model suggests that CV spring-run Chinook salmon will accumulate less than 2.0 $\mu\text{g/g}$ whole body weight of selenium and at this level there would be no adverse effects to individuals. Dissolved selenium values above 3.89 to 6.07 $\mu\text{g/L}$ could potentially affect the biology of any CV spring-run Chinook salmon present in the action area, causing them to accumulate unsafe levels of selenium in their tissues, potentially causing reduced growth rates, internal organ damage, developmental deformities, and increased rates of mortality (Hamilton *et al.* 1990, Hamilton 2004). As long as the proposed action meets the target total selenium goal of 5 $\mu\text{g/L}$ (total selenium: dissolved, particulate, and sedimentary) at Site R it is not expected that San Luis Drain stormwater discharge would result in adverse effects to CV spring-run Chinook salmon.

CCV Steelhead and Critical Habitat

CCV steelhead are not expected to be in the part of the action area that overlaps with the Restoration Area, because of a steelhead monitoring program facilitated by Reclamation through the San Joaquin River Restoration Program. Please refer to Endangered Species Act Section 10(a)(1)(A) permit 16608-2R for details. However, CCV steelhead adults and juveniles could be present from the confluence of the San Joaquin River and Merced River to Crows Landing. Any CCV steelhead juveniles in the action area would be exposed to the same potential effects as explained above for CV spring-run Chinook salmon, since the juvenile life history strategies of

Chinook salmon and steelhead are similar in their parr to smolt life stages and use the same habitats for the same purposes, for approximately the same periods.

Reclamation used the model in Presser and Luoma (2010) to estimate potential whole body selenium concentrations from in water selenium concentrations, using a series of assumptions that are explained in a memorandum dated October 28, 2019 from H.T. Harvey & Associates (Appendix A). The water column selenium value of 4.37 to 5.23 µg/L was the range calculated that would not accumulate more than 4 µg/g selenium whole body tissue, dry weight and therefore, not effect CCV steelhead. At or below this limit the model suggests that CCV steelhead will accumulate less than 2.0 µg/g whole body weight of selenium from the proposed action and at this level there will be no adverse effects to individuals. In-water dissolved selenium levels above 4.37 to 5.23 µg/L could potentially affect the biology of any CCV steelhead present in the action area, causing them to have unsafe levels of selenium due to bioaccumulation.

No adverse affects to CCV steelhead critical habitat in the action area are expected because levels of selenium must remain within a safe range for CCV steelhead feeding and use in the area, and there are no other modifications to critical habitat in the proposed project.

sDPS Green Sturgeon

Green sturgeon do not currently inhabit the action area. In 2017, a green sturgeon was confirmed on the Stanislaus River (Breitler 2017), which is the closest confirmed sighting of the species to the action area, approximately 33 miles downstream of the San Luis Drain terminus. However, in 2019, white sturgeon were captured in the action area by researchers from the U.S. Fish and Wildlife Service and Reclamation during routine monitoring of the area. Since white sturgeon are generally the same size or larger than green sturgeon, and have approximately the same swimming capacity and behavior, this would indicate that large sturgeon could access the action area given sufficient water flows and temperatures.

Without confirmed use of the area by green sturgeon, the presence or absence of white sturgeon near Sites R, D, and G (Figure 1) will serve as a surrogate for green sturgeon accessibility to the project area. Since no white sturgeon have been known to access Site D, it is assumed that green sturgeon will not be exposed to the highest amounts of selenium in the discharged stormwater.

Reclamation used the model in Presser and Luoma (2010) to estimate potential whole body selenium concentrations from in water selenium concentrations, using a series of assumptions that are explained in a memorandum dated October 28, 2019, from H.T. Harvey & Associates (Appendix A). The water column selenium value of 2.05 µg/L was the limit calculated that would not accumulate dangerous amounts of selenium in sDPS green sturgeon tissue. At or below this limit the model suggests that green sturgeon will accumulate less than 3.0 µg/g whole body weight of selenium due to the proposed action, and at this level there will be no adverse effects to individuals. In-water levels above 2.05 µg/L could potentially affect the biology of any green sturgeon present in the action area, causing them to have unsafe levels of in-tissue selenium due to bioaccumulation.

Since a sDPS green sturgeon has not been confirmed as using the action area, there is not enough measureable evidence that the proposed action has the potential to expose a sDPS green sturgeon to potential adverse effects as far downstream as the Stanislaus River. However, green sturgeon are known to be much more sensitive to selenium toxicity than white sturgeon, established through feeding trials (De Riu *et al.* 2014). Therefore, if green sturgeon are confirmed using and/or migrating through the action area, Section 7 re-consultation will be necessary to evaluate effects from the proposed action on green sturgeon due to the high risk of exposure to selenium-laden prey while foraging.

Conclusion

Based on this analysis and the best information available on the effects of selenium on the fish species under examination, the water quality status of the receiving water bodies, and the constituents expected in the discharged stormwater, NMFS concurs with Reclamation that the proposed action is not likely to adversely affect the subject listed species and designated critical habitat. This concurrence stands as long as all conservation measures are fulfilled and water quality objectives are met for the entirety of the consultation timeline. This determination will be critically reviewed with Reclamation and the Authority after five years, in 2025, at which time NMFS will re-establish whether a not likely to adversely affect concurrence is still valid or if a formal ESA consultation with incidental take coverage would be warranted.

Reinitiation of Consultation

Reinitiation of consultation is required and shall be requested by Reclamation or by NMFS, where discretionary Federal involvement or control over the action has been retained or is authorized by law and (1) the proposed action causes take; (2) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (3) the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the written concurrence; or (4) a new species is listed or critical habitat designated that may be affected by the identified action (50 CFR 402.16). This concludes the ESA portion of this consultation.

Section 7(a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of threatened and endangered species. Reclamation also has the same responsibilities, and informal consultation offers action agencies an opportunity to address their conservation responsibilities under section 7(a)(1).

FISH AND WILDLIFE COORDINATION ACT

The purpose of the FWCA is to ensure that wildlife conservation receives equal consideration, and is coordinated with other aspects of water resources development (16 U.S.C. 661). The FWCA establishes a consultation requirement for Federal departments and agencies that undertake any action that proposes to modify any stream or other body of water for any purpose, including navigation and drainage (16 U.S.C. 662(a)). Consistent with this consultation requirement, NMFS provides recommendations and comments to Federal action agencies for the purpose of conserving fish and wildlife resources. The FWCA allows the opportunity to offer

recommendations for the conservation of species and habitats beyond those currently managed under the ESA and MSA.

The following recommendations apply to the proposed action:

- Filter stormwater using bioretention system shown by McIntyre *et al.* 2015 or other systems to remove potentially harmful pollution before they reach the San Luis Drain.
- For sheet flow: filter bearing media waddles in multiples across the sheet flow area staked out before stormwater is collected or directed into the Drain. Filters include the compost/sand mixture and media containment devices may vary (socks, plastic tubs or plastic tubes with holes, etc) as long as water is forced to travel through the filter media/waddle to some extent. Shallow lines may be needed to nest filter waddles into soil to ensure water must pass through them via gravity before exiting farm.
- For collected, channelized stormwater flows: filter berms, staked in multiple perpendicular to flow, or clean topsoil/compost/sand mixture in swales over a gravel bottom in the lowest point of stormwater channel, and/or regulating the flow and directing it into gravity fed bio filtration columns with media ala McIntyre *et al.* 2015, a compost/sand/shredded bark mix over gravel filters akin to urban road stormwater treatment.
- For drainage storage ponds over-topping: a filtered approach with multiple bioretention (compost/sand over gravel layer) treatment pods to catch and treat overtopped water before its exit from the treatment system.
- In the San Luis Drain itself: staked filter waddles perpendicular to water flow across multiple locations, bioswales overlay of gravel & compost/sand topsoil, getting that treated subsurface flow going. No need to plant foliage (though plants may occur naturally) as they may attract more wildlife and Taylor *et al.* 2018 show no additional bioretention performance benefits from including plants or fungi, but the filtration will need to be switched out over time.
- All stormwater bioretention treatment measures should be checked regularly to ensure they are filtering and performing as intended, and media should be replaced as it becomes ineffective. Used media should be disposed of in areas that will not leave to eventual re-contamination of the stormwater conveyance and treatment system.

This concludes the FWCA portion of this consultation.

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APPENDIX A

APPENDIX A



H. T. HARVEY & ASSOCIATES

Ecological Consultants

Memorandum

October 28, 2019

To: Joe McGahan, Summers Engineering

From: H. T. Harvey & Associates

Subject: Review and Application of Presser and Luoma Fish Selenium Models to the Long-term Stormwater Management Plan Analysis for the Grasslands Drainage Area

The Bureau of Reclamation (Reclamation), National Marine Fisheries Service (NMFS), and the San Luis & Delta-Mendota Water Authority (Authority) and its representatives met in Sacramento, CA on September 27, 2019 to discuss the Biological Evaluation (BE) for the Long-term Stormwater Management Plan for the Grasslands Drainage Area submitted to NMFS on August 20, 2019. NMFS stated that they were concerned that the thresholds for selenium water and fish tissue stated in the BE were not protective enough of the fish in question, Central Valley spring-run Chinook salmon Evolutionarily Significant Unit (ESU) (*Oncorhynchus tshawytscha*), the California Central Valley steelhead Distinct Population Segment (DPS) (*O. mykiss*), and the North American green sturgeon, Southern DPS (*Acipenser medirostris*). NMFS did not propose revised thresholds and recommended that the Bureau and the Authority review *A Methodology for Ecosystem-Scale Modeling of Selenium* by Theresa Presser of the U. S. Geological Survey and Samuel Luoma on the University of California, Davis published in 2010 and apply the methodologies describe there-in to estimate the upper limit of water column selenium (Se) that would be protective of those fish species.

Presser and Luoma (2010) describe the value and application of the methodology as follows:

The value of the ecosystem-scale methodology lies in its explanation of how a predator might be accumulating a Se concentration that, for example, exceeds the choice of criterion, guideline, or target concentration in its tissues. The step-by-step approach of the methodology (Figure 1) [sic] provides a means of linking water-column Se concentrations to Se

bioaccumulation with much more certainty than does the traditional correlation approach. The methodology can also describe implications of different choices of dietary or tissue guidelines. For example, a water-column concentration responsible for an observed bioaccumulated Se concentration can be determined in any specific environment for which some data are available (or a reasonable scenario can be defined).

In our review and application of the ecosystem-scale methodology we identified that empirical data for model parameters in the Action Area are limited or absent for the species under consideration. In each case we defined reasonable yet protective scenarios as recommended by the authors (Presser and Luoma 2010) and consistent with the September 26, 2019 federal regulations for interagency consultations (<https://www.govinfo.gov/content/pkg/FR-2019-08-27/pdf/2019-17517.pdf>) that clarify:

“...nothing in the Act specifically requires the Services to utilize a “worst-case scenario” or make unduly conservative modeling assumptions. The Act does require the use of the best scientific and commercial data available by all parties and obligates Federal agencies to insure their actions are not likely to jeopardize listed species or adversely modify critical habitat.” Furthermore, “The information need not be dispositive, free from all uncertainty, or immune from disagreement to meet this standard.”

Presser and Luoma (2010) describe that “The greatest values of the present model are that it shows why allowable water-column concentrations differ among aquatic environments and that it advances our ability to explain food web bioaccumulation.” “Thus, ecosystem-scale modeling offers a major step forward in terms of confronting and defining uncertainty by formalizing the knowledge necessary to understand the basis of protective criteria for Se.” “The model can provide perspective by illustrating that variability around reasonable scenarios for that [sic] watershed, but the model is not suitable for explicitly defining one number that will be protective in any habitat.

With this understanding, we applied the Presser and Luoma (2010) equation for translation of a fish tissue selenium concentration to a water-column Se concentration to Central Valley spring-run Chinook salmon, California Central Valley steelhead, and North American green sturgeon. That equation is:

$$C_{\text{water}} = C_{\text{fish}} \div (TTF_{\text{fish}}) (K_d) (TTF_{\text{invertebrate}})$$

Where C_{fish} is the upper safe limit of whole-body fish tissue Se; TTF_{fish} is the trophic transfer factor for fish, defined as the potential to bioaccumulate Se for the selected fish species. K_d is a measurement of the body of waters potential for the uptake and transformation (bioaccumulation) of Se. K_d is defined as the ratio of particulate matter (phytoplankton, periphyton, detritus, inorganic suspended material, biofilm, sediment, and attached vascular plants) Se (in dry weight, dw) to the dissolved Se concentration in the water column.

$TTF_{\text{invertebrate}}$ is the trophic transfer factor for invertebrates, defined as the potential to bioaccumulate Se for the selected invertebrate species targeted by the fish species in question. The TFF for a food web including multiple prey species can be calculated using the TFF values, and the proportions which they are consumed, of the different prey species of the fish’s diet:

$$C_{\text{water}} = C_{\text{fish}} \div (TTF_{\text{fish}}) (K_d) [(TTF_{\text{invertebrate a}}) (\text{prey fraction}) + (TTF_{\text{invertebrate b}}) (\text{prey fraction}) + (TTF_{\text{invertebrate c}}) (\text{prey fraction})]$$

The sequential bioaccumulation of Se in longer food webs can be accounted for by adding additional steps

$$C_{\text{water}} = C_{\text{fish}} \div (TTF_{\text{fish}}) (K_d) (TTF_{\text{invertebrate a}}) (TTF_{\text{forage fish}}),$$

Or an even longer food web equation would be:

$$C_{\text{water}} = C_{\text{fish}} \div (TTF_{\text{fish}}) (K_d) (TTF_{\text{TL2 invertebrate a}}) (TTF_{\text{TL3 invertebrate}}) (TTF_{\text{TL3 fish}})$$

Central Valley Spring-run Chinook Salmon Modeling

While a great deal of water column selenium data exists from recent years for the segment of the San Joaquin River in the Action Area, detailed recent particulate selenium data necessary to calculate a value for K_d does not exist. “Most rivers and creeks show K_d s of greater than 100 and less than 300” (Presser and Luoma 2010). Presser and Luoma (2010) recommend that “In the absence of a rich data set, the range can be narrowed based on hydrologic and speciation conditions, for example, using the data in Table 2[*sic*].” Therefore, to apply the model to all three fish species in the Action Area, we used the K_d value of 146 for the San Joaquin River from Table 2 in Presser and Luoma (2010). This value was calculated using a water column Se of value of 11 µg/L and a particulate selenium value of 1.6 µg/g (dw) recorded in 1993. Water column selenium in the Action Area is now considerably lower than in 1993. Because K_d is calculated as a ratio, the value for K_d may be similar to that from 1993 if there has been a corresponding drop in particulate selenium.

We chose the most conservative published effect concentration (C_{fish}) of 2.0 µg/g Se (whole body, dw) based on the threshold for cold-water fish published by the U. S. Department of Interior (1998). A trophic transfer factor (TTF) for Chinook salmon has not been published. The average TTF of the four salmonid species (brook, rainbow, cutthroat, and brown trout) listed in Table 3 of Presser and Luoma (2010) is 1.01. Presser and Luoma (2010) describe that “The range of TTFs derived for fish from laboratory experiments and field data is remarkably similar.” We therefore used the average fish value of 1.1 from Table 3 (Presser and Luoma 2010) as the trophic transfer factor for Chinook salmon as suggested by the authors when that value is not known. Because a TTF of 1.1 is higher than the average of the value for similar species (1.01), use of 1.1 in the model appears to be a reasonable, protective value.-

Two different food web models were applied to the Chinook salmon equation. The first was an attempt to model the food web as accurately as possible using existing information. We used diet data published for fall run juvenile Chinook salmon in the Sacramento River that were collected in February and March of 1998 and 1999 (Sommer et al. 2001). Though this study was not from the San Joaquin River, it was from a similar river on the floor of Central Valley. Tagged hatchery, juvenile salmon released in the Sacramento River below the Sacramento Weir were recaptured downstream near Chipps Island. The purpose of the study was to compare the condition and diet of these fish to the condition and diet of similarly tagged fish that traveled through the floodplain of the Yolo

Bypass. Zooplankton and chironomid larvae comprised over 90% of the diet of juvenile Chinook salmon that took the Sacramento River route. Diet results were compared as an index of relative importance (IRI), calculated as $IRI = (\% \text{ numeric composition} + \% \text{ weight composition}) \times \% \text{ frequency of occurrence}$. We used the TTFs provided in Table 3 for zooplankton (1.5) and chironomids (2.7) and we used the value for aquatic insect average, a mean of mayfly, caddisfly, crane fly, stonefly, damselfly, corixid, and chironomid, with a value of 3.2 for the remaining small percent of diet. The resulting equation for translation of the fish tissue selenium concentration to a water-column Se concentration is:

$$C_{\text{water}} = 2.0 \mu\text{g/g} (1000 \text{ g/L}) \div (1.1) (146) [(1.5) (0.73) + (2.7) (0.20) + (3.2) (0.07)]$$

$$C_{\text{water}} = 6.70 \mu\text{g/L}$$

The second model we considered is a more conservative (i.e., protective) food web model that applies the TTF given labeled “aquatic insect average”, a mean of mayfly, caddisfly, crane fly, stonefly, damselfly, corixid, and chironomid. The resulting TTF, 3.2, is higher and therefore assumes the potential for the invertebrates to bioaccumulate Se is greater than we calculated using published Chinook diet. The resulting equation is:

$$C_{\text{water}} = 2.0 \mu\text{g/g} (1000 \text{ g/L}) \div [(1.1) (146) (3.2)]$$

$$C_{\text{water}} = 3.89 \mu\text{g/L}$$

California Central Valley Steelhead Modeling

The diet of Central Valley steelhead collected in the Mokelumne River near Lodi, CA (Merz 2002) was used to model a food web for Central Valley steelhead, because we believe it represents a reasonable approximation given the absence of similar data for the Action Area. The Mokelumne River is a smaller river than the San Joaquin, but like the San Joaquin, it is located on the floor of the Central Valley. Chironomid (37.9%), caddisflies (30%), mayflies (12.8%), zooplankton (10.3%), and fish (4.75%) comprised over 95 percent of steelhead diet and measured by IRI. TTFs of 2.7 for chironomids, 3.2 for caddisflies, 2.7 for mayflies, and 1.5 for zooplankton were applied to the model. The fish detected in the stomach contents represented various species including juvenile Chinook salmon, sculpins, and others, so the average TTF for fish of 1.1 was applied for the small amount of fish in the diet. For the remaining 4.25% of the diet, we applied a TTF aquatic insect average of 3.2. The TTF of 0.98 given in Table 2 for rainbow trout was applied in this case, as was the K_d of 146 listed for the San Joaquin River, for the reasons previously described. The resulting equation is:

$$C_{\text{water}} = 2.0 \mu\text{g/g} (1000 \text{ g/L}) \div (0.98) (146) [(2.7) (0.379) + (3.2) (0.30) + (2.7) (0.128) + (1.5) (0.103) + (1.1) (0.0475) + 3.2(0.0425)]$$

$$C_{\text{water}} = 5.23 \mu\text{g/L}$$

As with Chinook salmon, we ran a second more conservative (i.e. protective) food web model that applied the TTF given labeled aquatic insect average of 3.2 with the same TTF for fish and K_d for the San Joaquin River described above. The resulting equation for the second model is:

$$C_{\text{water}} = 2.0 \mu\text{g/g (1000 g/L)} \div [(0.98) (146) (3.2)]$$

$$C_{\text{water}} = 4.37 \mu\text{g/L}$$

North American Green Sturgeon Modeling

As described in the BE for the Long-term Stormwater Management Plan for the Grasslands Drainage Area, Southern DPS green sturgeon are not known to occur in the Action Area. The nearest record for the species outside of the Action Area is a single confirmed observation of an adult green sturgeon in the Stanislaus River near Knights Ferry (Anderson et al. 2018), which extended the previously accepted geographical range for the species upstream by approximately 53 river miles. No information exists to extend the geographical range of the species further into the Action Area, despite state and federal efforts. In 2006, the California Department of Fish and Wildlife made sturgeon research and monitoring a priority, working closely with the Service's Lodi field station, and since has required sturgeon anglers to report catch locations. In 2011, the Service assembled a field crew of primarily Service biologists to begin sampling to detect sturgeon presence and spawning, and later tagging (https://www.fws.gov/cno/newsroom/highlights/2018/green_sturgeon/).

Consequently, no species-specific information for green sturgeon within or near the Action Area is available to parameterize the model, and less information than was found for Chinook salmon and Central Valley steelhead exists in the literature and in Table 3 of Presser and Luoma (2010) for completing a model for green sturgeon. In the spirit of confronting and defining uncertainty, and furthering the understanding of the knowledge necessary to understand the basis of protective criteria for Se, we attempted to assemble a reasonable model for green sturgeon.

A TTF value for green sturgeon is not available. A TTF of 1.3 has been provided for white sturgeon (*Acipenser transmontanus*); however, green sturgeon are known to be more sensitive to Se exposure than white sturgeon (De Riu et al. 2014). We therefore chose to use the highest, most protective, TTF value for a fish listed in Table 3, 1.6, to develop a conservative model for green sturgeon. Fewer TTF values are given for the species that may comprise the diet of the bottom feeding green sturgeon. Green sturgeon during the riverine portion of their life cycle eat small crustaceans, such as amphipods and opossum shrimp, annelid worms, isopods, and clams (CDFG 2001, USFWS 1995). Species possibly eaten by green sturgeon with TTFs listed in Table 3 of Presser and Luoma (2010) include freshwater amphipods (0.9), Asian clam (*Corbicula fluminea*) (2.8), and overbite clam (*Corbula amurensis*) (6.25). Rather than try to model a food web for green sturgeon with such scant information and no information for the Action Area, we chose the sturgeon prey item, the overbite clam, with the highest listed TTF value and assumed that represented 100% of its diet. Lastly, we chose an effect concentration (C_{fish}) of 3.0 $\mu\text{g/g}$ Se (whole body, dw) based on the threshold for warm-water fish published by the U. S. Department of Interior (1998), the most protective published effect threshold we found. The resulting equation for translation of the fish tissue selenium concentration to a water-column Se concentration is:

$$C_{\text{water}} = 3.0 \mu\text{g/g (1000 g/L)} \div [(1.6) (146) (6.25)]$$

$$C_{\text{water}} = 2.05 \mu\text{g/L}$$

Summary and Conclusion

We developed reasonable yet protective scenarios given the absence of current data for the Action Area to estimate the upper limit of water column selenium (Se) that would be protective of juvenile Chinook salmon migrating through the Action Area, Central Valley steelhead, and green sturgeon. The water column Se limits ranged from 3.89 to 6.07 $\mu\text{g/L}$ for Chinook salmon, 4.37 to 5.23 $\mu\text{g/L}$ for Central Valley steelhead, and 2.05 $\mu\text{g/L}$ for green sturgeon. Since the end of irrigation induced drain water discharges into the San Joaquin River in 2014, water sampled just downstream from the Mud Slough inlet at Site R has averaged 0.5 $\mu\text{g/L}$ Se. The highest annual average since then is 0.7 $\mu\text{g/L}$ Se in 2016, and the highest 90 day average is 1.6 $\mu\text{g/L}$ Se, which was January to March 2016. Consequently, according to these models, the water Se in the Action Area would not result Se accumulation in juvenile Chinook salmon migrating through the area, or Central Valley steelhead, or green sturgeon foraging there to levels of Se above the effect level (2.0 $\mu\text{g/g}$ whole body Se, dw for Chinook salmon and Central Valley steelhead or 3.0 $\mu\text{g/g}$ whole body Se for green sturgeon).

In conclusion, there is a paucity of empirical and experimental data to parameterize models for the Action Area using the ecosystem-scale methodology developed by Presser and Luoma (2010). We developed reasonable and protective scenarios using their recommended approach and believe, even with the current level of uncertainty, that the analysis has contributed to the application of the best scientific and commercial data available to assess the consequences of the Proposed Action. The results of this analysis affirm Reclamation's determinations in the BE:


- threatened Central Valley steelhead: Not likely to adversely affect and not likely to adversely affect designated critical habitat.
- threatened Central Valley spring-run Chinook salmon: Not likely to adversely affect.
- threatened North American green sturgeon, Southern DPS: Not likely to adversely affect.

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Please direct questions regarding this letter to Hilary Glenn at the California Central Valley Office in Sacramento, CA, (916) 930-3720 or hilary.glenn@noaa.gov.

Sincerely,


Erin Strange
Branch Supervisor
San Joaquin River Branch

cc: Copy to the File 151422- WCR2019-SA00546

Electronic copy only:

Shauna McDonald, Bureau of Reclamation, smcdonald@usbr.gov
David Hyatt, Bureau of Reclamation, dhyatt@usbr.gov

Appendix D: Summary Table of Monitoring Locations and Frequency with Location Map

Constituent	Site D	Site R	Site H2	Site G	Site N	Site A	Site B2	Site B3	San Luis Drain Checks 1-18	Site J#	Site K2#	Site L3#	Site M3#	San Joaquin River @ Lander Ave	Site F	Site C
Flow	c	-	c	c	c	c	c	-	-	d	d	d	d	c	c	c!
pH/Temperature	w	w	-	w	w	-	-	w	-	d	d	d	d	m	m	m
Electrical Conductivity	c	w	c	c	c	c	c	d	-	d	d	d	d	d	c	m
Total Selenium	d	w	-	w	w	w	-	d	-	d	d	d	d	m	m	m
Dissolved Selenium	m	m	-	m*	-	m*	-	m*	-	-	-	-	-	-	-	-
Sediment Selenium	a	a	-	-	-	a	-	a	a	-	-	-	-	-	-	-
Particulate Selenium	b	b	-	b	-	-	-	-	-	-	-	-	-	-	-	-
Hardness	m	m	-	-	-	-	-	m*	-	-	-	-	-	m	m	m
Iron (dissolved)	m	m	-	-	-	-	-	m*	-	-	-	-	-	-	-	-
Lead (dissolved)	m	m	-	-	-	-	-	m*	-	-	-	-	-	m	m	m
Mercury (dissolved)	m	m	-	-	-	-	-	m*	-	-	-	-	-	m	m	m
Copper (dissolved)	m	m	-	-	-	-	-	m*	-	-	-	-	-	m	m	m
Zinc (dissolved)	m	m	-	-	-	-	-	m*	-	-	-	-	-	m	m	m
Aquatic Toxicity	m	q	-	-	-	-	q	-	-	-	-	-	-	m/q	m	m
Sediment Toxicity	b	-	-	-	-	-	-	-	-	-	-	-	-	b	b	b
Pesticides (Table 4)	m*	m*	-	-	-	-	-	m*	-	-	-	-	-	m	m	m
Total Boron	d	w	-	w	w	w		d	-	d	d	d	d	m	m	m
Total Molybdenum	m	m	-	-	m	-	-	m*	-	-	-	-	-	m	m	m
Total Organic Carbon	m	-	-	-	-	-	-	-	-	-	-	-	-	m	m	m
Sediment Volume	-	-	-	-	-	-	-	-	a	-	-	-	-	-	-	-
Total Suspended Solids	-	-	-	-	-	-	-	-	-	-	-	-	-	m	m	m
Turbidity	w	w	-	-	-	-	-	-	-	-	-	-	-	m	m	m
Oil/Grease/Hydrocarbons	-	-	-	-	-	a*	-	-	-	-	-	-	-	-	-	-
Total Phosphorus	m	m	-	-	-	m*	-	m*	-	-	-	-	-	-	-	-
Nitrate - as N	m	m	-	-	m	m*	-	m	-	-	-	-	-	m	m	m
Ammonia - as N	m	m	-	-	m	m*	-	m	-	-	-	-	-	m	m	m
E. coli	-	-	-	-	-	-	-	a*	-	-	-	-	-	m	m	m

Note: Monitoring program components may evolve over time, consistent with the requirements of the WDR and ESA consultations completed for the Proposed Action. A figure is included below showing the monitoring site locations. A description of the monitoring locations was provided in Section 2.2.1 of the EA.

Legend:

= Site sampled only when storm events cause discharges into wetland channels

- = Not included in monitoring program

a = annual sample

a* = annual at first storm event

b = biannual, spring and fall samples

c = continuous

c! = calculated from Site B2 and Site D

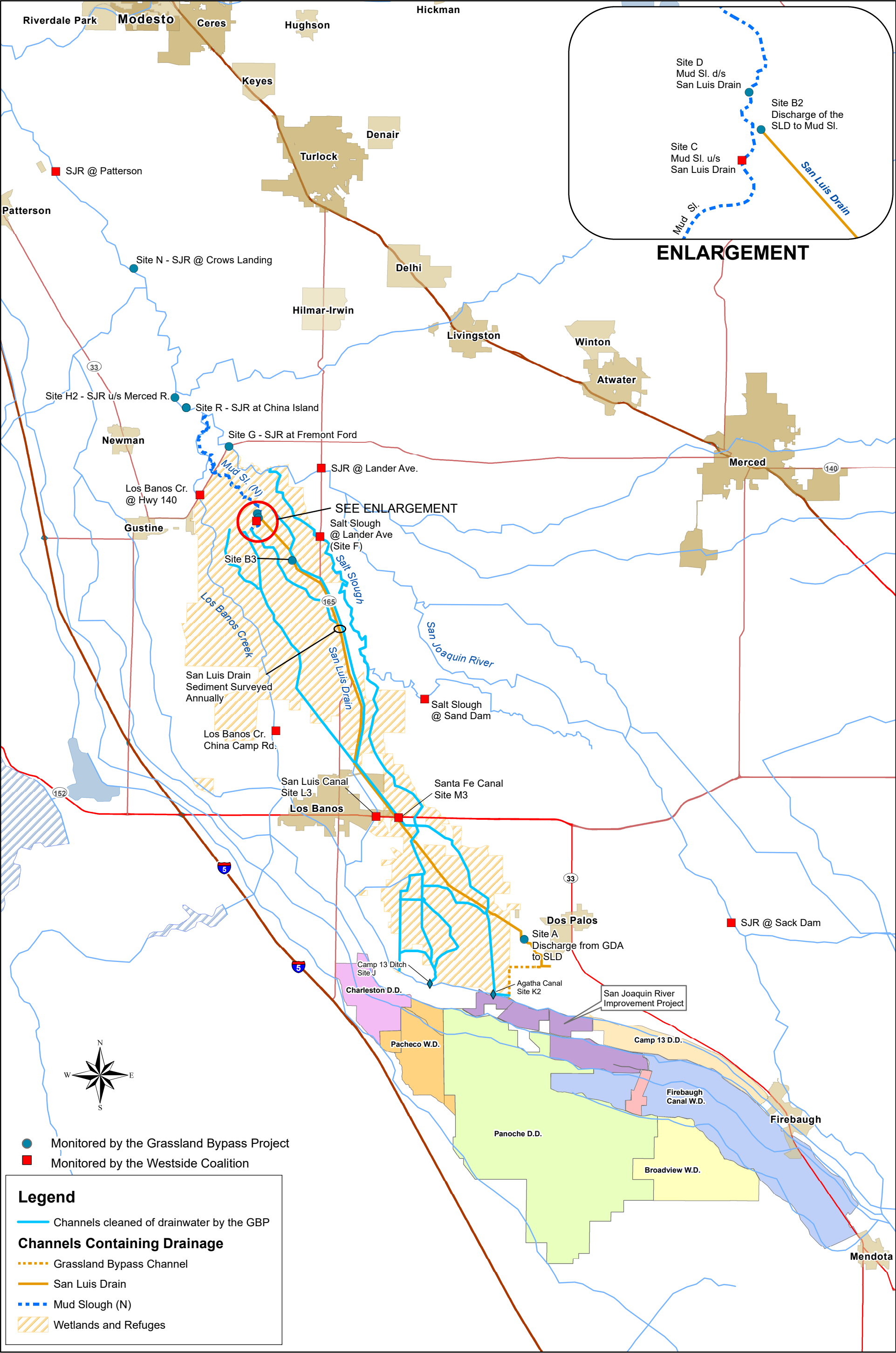
d = daily sample/measurement

w = weekly sample

m = monthly sample

m* = monthly sample when Site A is flowing

q = 4x per year, scheduled



Grassland Bypass Project
Monitoring Location Map

Prepared by:
Summers Engineering, Inc.
Consulting Engineers
Hanford California

Appendix E: Reclamation's Cultural Resource Determination

CULTURAL RESOURCES COMPLIANCE
Division of Environmental Affairs
Cultural Resources Branch (MP-153)

MP-153 Tracking Number: 19-SCAO-178.001

Project Name: Long-term Stormwater Management Plan for the Grasslands Drainage Area

NEPA Document: EA-19-029

NEPA Contact: Kat Linder, Natural Resource Specialist

MP 153 Cultural Resources Reviewer: BranDee Bruce, Architectural Historian

Date: August 26, 2019

Reclamation proposes to approve San Luis & Delta-Mendota Water Authority's (Authority) request to convey stormwater through the San Luis Drain (SLD). In 1996, the Grassland Bypass Project was implemented to prevent the discharge of subsurface agricultural drainage and stormwater into refuges and wetlands by instead conveying drainage water through the federally owned SLD, into Mud Slough, and eventually into the San Joaquin River. Currently, the operation of the Grassland Bypass Project is permitted under the California Regional Water Quality Control Board Order No. R5-2015-0094. The Grassland Bypass Project has been subject to previous review under the California Environmental Quality Act and the National Environmental Policy Act (NEPA), including preparation and certification of the 2009 *Final Environmental Impact Statement and Environmental Impact Report for the Grassland Bypass Project 2010-2019*. The Grassland Bypass Project will end on December 31, 2019. The Authority has requested authorization from Reclamation to use the San Luis Drain to convey stormwater induced flows after the expiration of the Grassland Bypass Project. Existing facilities will be used to accomplish this action, and no ground disturbance or construction or modification of new facilities will be needed.

Agencies that participate in the Authority will be addressing stormwater drainage in multiple ways, including completing improvements to existing facilities (non-federal), but any of those projects are separate from this proposed action and will occur with or without Reclamation's approval of this undertaking.

This is the type of undertaking that does not have the potential to cause effects to historic properties, should such properties be present, pursuant to the Title 54 U.S.C. § 306108, commonly known as Section 106 of the National Historic Preservation Act (NHPA) regulations codified at 36 CFR § 800.3(a)(1). Reclamation cultural staff have reviewed the draft EA titled *Long-term Stormwater Management Plan for the Grasslands Drainage Area* and concurs that the No Action or Proposed Action alternatives will result in no significant impacts to cultural

resources. Reclamation has no further obligations under NHPA Section 106, pursuant to 36 CFR § 800.3(a)(1).

This document is intended to convey the completion of the NHPA Section 106 process for this undertaking. Please retain a copy in the administrative record for this action. Should changes be made to this project, additional NHPA Section 106 review, possibly including consultation with the State Historic Preservation Officer, may be necessary. Thank you for providing the opportunity to comment.